

# ALL HANDS



SEPTEMBER 1973







# ALL HANDS

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• FRONT COVER: CUTTING THROUGH THE WATERS of Narragansett Bay, R. I., the guided missile frigate USS Farragut (DLG 6) heads for duty on the open seas. Illustration by staff artist Michael D. Tuffli. Back cover photo taken on the flight deck of the USS Forrestal (CVA 59) by PH3 W. R. Curtsinger.

• AT LEFT: WATCHING THE WATCH—IM3 John Cochran went through a Navy Class "C" school to learn to be a watch repairman; his duties include the ship's clocks and navigational chronometers which he keeps in perfect working order aboard USS Puget Sound (AD 38). Photo by PH2 Rodger C. Anderson.







# DESTROYERS IN THE 70'S

The late John Steinbeck once said, "A destroyer is all boat," and he was right. But times change and so do ships for the destroyers Steinbeck spoke of are passing into history. He and other tincan admirers, however, probably would be as happy with the destroyer force taking shape today.

Before the year 1968, about 75 per cent of all U. S. destroyers afloat were at least 20 years old; even a large portion of today's active force is made up of FRAM I (rehabilitated and generally modernized) ships.

In 1971, however, a new look in destroyers became evident when the Navy launched a shipbuilding program which, by now, has about reached its midpoint.

Although FRAM I ships are still much in evidence, newly built destroyer escorts and guided missile frigates are gaining on these old warhorses. And then there is the *Spruance* class of destroyer. This departure from the old pattern will undoubtedly increase the Fleet's modernity and increase its balance.

Along with the general upgrading of the destroyer force are systems designed to improve the ship's ability to perform her mission. Probably the most conspicuous alteration in the cruiser-destroyer force has been the ever increasing use of helicopters, especially in anti-submarine warfare.

Let's start out with LAMPS—other innovations will be discussed, in brief, later on.

LAMPS (Light Airborne Multi-Purpose System) is a case in point. LAMPS is basically a helicopter which operates from a destroyer deck and it's equipped to extend the ship's striking power.

If the threat were, for example, a submarine—the LAMPS would be launched to help detect and classify the underwater enemy. This would be done by using active and passive sonobuoys, radar and equipment which can detect changes in the earth's magnetic field created by a sub's metal hull. With these sensors, the LAMPS copter should be able to localize and classify the submarine.

If, for example, an antiship missile is expected,

LAMPS would take to the air and position itself along the axis of probable attack where it would act as a sensor. From its position, LAMPS could then see the launching platform and warn the destroyer against an approaching missile. The warning would give the ship a chance to use her electronic defenses and decoys. It would also improve the effectiveness of the destroyer's anti-air missile system or its rapid-fire five-inch gun battery. The chopper might also scatter "chaff" to confuse the missile and cause it to pursue an erratic course.

The LAMPS copter is a *Seasprite* with an SH-2D configuration. It is 52 and one-half feet long, 12 and one-half feet wide and 15 and one-half feet in height to tail rotor tip. When prepared for storage in a destroyer's "hangar," the system is a compact package 38 feet, four inches by twelve feet, five inches by thirteen feet, five inches. It weighs about six tons—about twice as much as DASH. It can remain in the air for about three hours and fly at speeds of more than 100 knots.

LAMPS carries a crew of three consisting of a pilot seated on the cockpit's right side and a copilot with dual flight controls on the left. The copilot is also navigator, in charge of electronic support. Behind the pilot and the copilot is the sensor operator who monitors and interprets incoming signals and who, of course, is the third crewmember.

A radar antenna capable of detecting small craft at ranges of 10 to 15 miles is housed in a radome under the aircraft's nose. Periscope detection distance is somewhat less, but still impressive.

The Magnetic Anomaly Detector (which senses submarines through variations in the earth's magnetic field) is starboard on the plane. Mounts on each side of the helo's fuselage can carry auxiliary fuel tanks or an ASW torpedo. There is also a rescue sling, hook and hoist to transfer people or supplies.

On the aft part of the cabin's port side, there is a rack which contains 15 sonobuoys which are shot straight out from the copter. A four-blade rotocute







unfolds as the sonobuoy descends toward the water. The buoy must hit the water with an impact great enough to release hydrophones. In addition to these, there are storage spaces for smoke markers, antennas, and sensors which include electronic support measures (ESM), Tactical Air Navigation (TACAN), a UHF direction finder, doppler navigation receiver (which enables a helicopter to remain absolutely motionless in the air), radio-telephone equipment, a sonobuoy receiver and an identification feature.

USS *Belknap* (DLG 26) was the first destroyer type equipped with this Light Airborne Multipurpose System. That was back in December 1971. Since that time, a number of other ships have been equipped with LAMPS. Eventually, all DLG 26, DLGN 35, DE 1040, DE 1052, DEG 1, DD 963, PF and DLGN 38 class ships will embark the LAMPS as the helicopters and crews become available.

With the increasing importance of helicopters to destroyer operations, it was only natural that in-flight refueling for the choppers would evolve. Such a capability within the Fleet greatly increases both the chopper's range and the destroyer's operational efficiency.

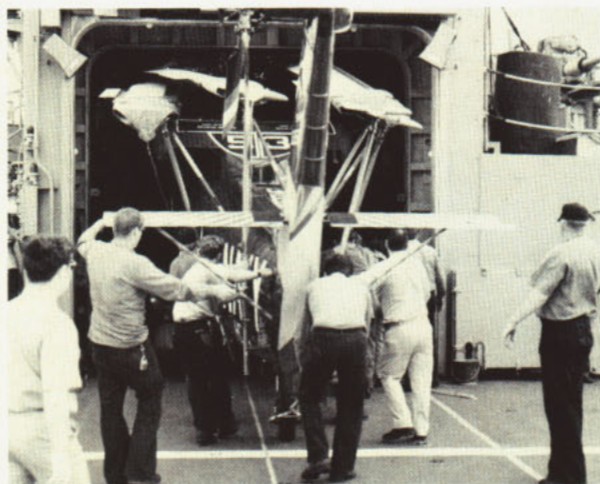
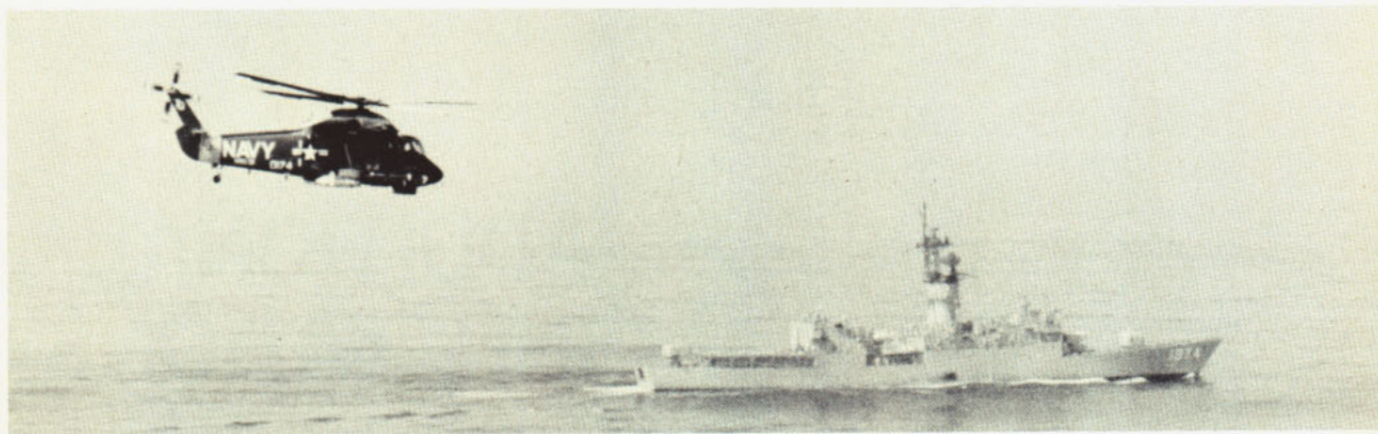
The technique of refueling a helicopter while still in flight, of course, has an acronym—HIFR (Helicopter In-Flight Refueling). Before a ship can qualify for the job of playing host to a dining helicopter, it must

meet certain requirements. For example, the ship must have a large enough area to handle choppers and possess a crew sufficiently trained and equipped to provide fire and crash parties. The ship must also be capable of quickly transferring fuel from storage tanks and pumping it 80 feet into the air at a rate of 50 gallons per minute at a pressure of 50 pounds per square inch. The ship also, of course, must have sufficient facilities to test the quality of the fuel being transferred.

The shipboard helicopter control officer maintains radio communications with the helo and directs the entire operation from his control booth while an enlisted landing signalman is responsible for bringing the chopper into position with hand signals. It takes three men to handle the fuel hose at the nozzle end and the pumping gang is composed of a leading petty officer, two hose handlers and a valve man.

With flammable fuel flowing between a moving destroyer and a hovering chopper, an important background for the operation is provided by the fire and crash crews which are supervised by the ship's DCA. Refueling a hovering helicopter is, of course, a complicated situation but each man involved knows his job and does it from the moment the chopper approaches until it lifts off.

Nobody wastes time when the word is passed to set



Facing page: USS *Belknap* (DLG 26) was the first destroyer to make use of the Light Airborne Multipurpose System (LAMPS). Here the LAMPS helicopter, a Seasprite SH-2D, lands on the after flight deck. Above: New escort ships like USS *Harold E. Holt* (DE 1074), also employ the LAMP system. Left: LAMPS helicopter is stored within a small hangar on the deck of the destroyer, in this case aboard USS *Wainwright* (DLG 28).



## DESTROYERS in the 70's



the HIFR detail. The fire and crash crews scramble to get their gear assembled near the flight deck. Salt-water hoses are run out and charged, while foam gear is made ready. The HIFR crew stretches the empty fuel hose out for the helicopter to pick up. The ship comes about to put the wind 15 to 20 degrees off the port bow at 15 to 20 knots. As the helicopter approaches from the stern, it is guided into hovering position over the hose nozzle. A sample of the fuel is sent up (despite the fact that the fuel was tested in the ship's lab only 24 hours earlier for water and sediment).

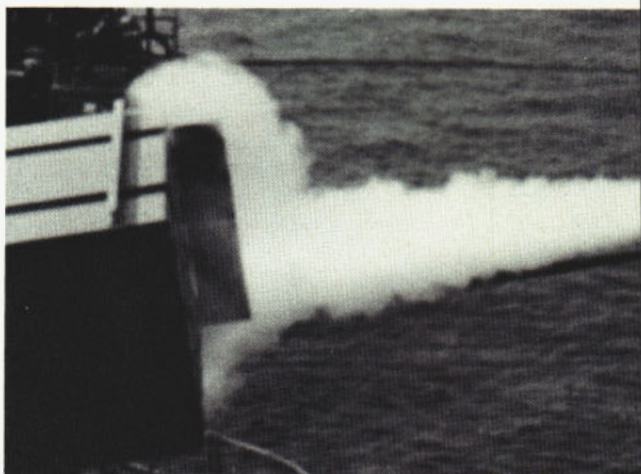
A pilot is understandably particular about what goes into the tanks and usually wants visually to check the fuel. If he's satisfied the fuel is clean, the hose's nozzle is hoisted aboard and slipped into the helo's fueling port. The chopper then moves to port over the water so it will be well clear of the ship and pumping begins after a signal from the chopper's crew.

While fuel is in the hose, the HIFR crew is kept busy maintaining proper tension on its heavy 150-foot length. Too much strain could cause it to part and possibly cause it to whip into the chopper's rotor. If conditions are ideal, the copter is level with the flight deck, but this isn't an easy position to maintain especially when the destroyer is low in the water. Practically speaking, the copter's position usually depends more on the length of the fueling hose and the nervelessness of the pilot than most other considerations.

The pilot is not the only man involved in HIFR who must have knowledge and nerve. Nerveless guts are a quality which must be shared by others both on deck and aboard the chopper, to avoid the possibility of crash and resulting fire or explosion. With a fuel hose attached, the helicopter is no longer a free agent. When the hose is full of highly explosive fuel, the dangers multiply. Despite compensating safety measures (one of which is a quick release hookup which makes it easy for the helicopter to rid itself quickly of most of the fueling hose) the operation requires both skill and bravery.

Despite the dangers inherent in HIFR, the procedure gives an ASW ship a tremendous advantage in that it allows both the copter and the ship to be independent of a carrier. Also, because the chopper doesn't have to land for each refueling, about 45 minutes are saved in a single operation. Most important, however, is the fact that the helicopter can be kept on station for a longer period of time thereby giving the destroyer more protection. When there are two helicopters involved in ASW operations, one can be kept on station constantly. To a cruiser-destroyer force that suspects enemy submarines are lurking nearby, it's a comforting thought.

But while the Destroyer-LAMPS program is a dramatic example of changing innovations, it is not the only change taking place on destroyers.



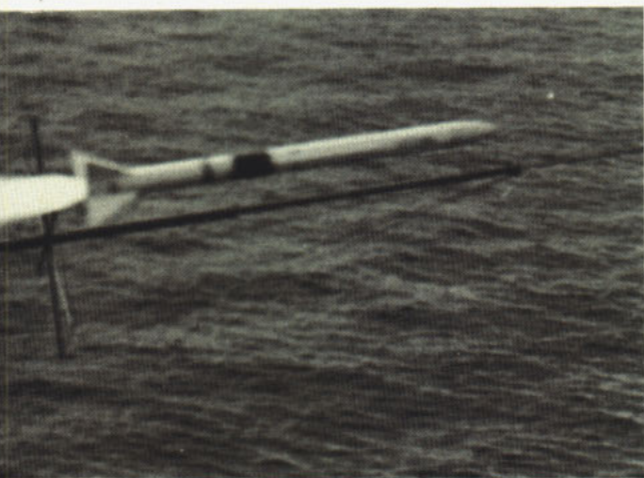
## ADDITIONAL INNOVATIONS

Here is a brief rundown on innovations in the destroyer Navy which have been factors leading toward higher quality and continuing improvement. Some are relatively recent while others have proved themselves over the years.

- The SQS-26 sonar. This and other high-powered sonars have become standard in the area of antisubmarine warfare. Independent variable depth sonar (IVDS) will also be installed in many ships. The IVDS can reach depths hidden from surface sonars.

- Antisubmarine Rocket (*Asroc*). Introduced to the operational Fleet in 1960, *Asroc* will continue to be a major ASW weapon in the new destroyers. *Asroc* is a torpedo delivered by a rocket engine. Upon arriving at the target area, the torpedo separates from the rocket, enters the water and destroys the sub. *Asroc*





backs up tube-launched torpedoes which will continue to be installed.

- **Basic Point Defense Missile System (BPDMS).** This is one of the newer systems of its kind. It fires a *Sparrow* missile and will provide quick response to air threats.

- **Interim Surface-to-Surface Missile (ISSM).** Recently introduced to the cruiser-destroyer force, the ISSM capability has been placed on a number of the new destroyer escorts of the DE 1052 class. The system employs a standard missile fired from the *Asroc* launcher. It is only a temporary measure but it greatly enhances strike-back capability.

- **Harpoon.** This is a more advanced surface-to-surface missile which will follow ISSM.

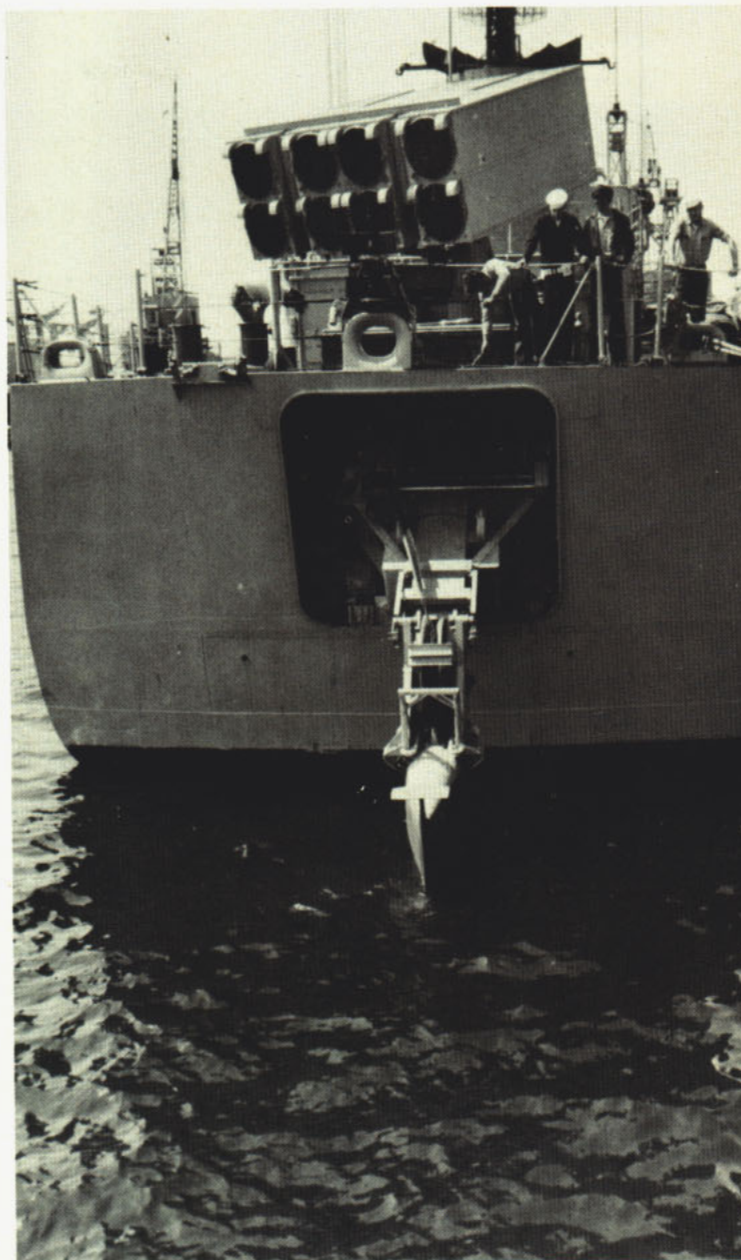
- **The MK 45 MOD 0 gunmount.** This is the first completely new major shipboard gunmount produced in 18 years. It is fully automatic and can be operated in all weather. It is scheduled to enter the force during the mid 70s.

- **Light Airborne Multi-Purpose system (LAMPS).** A manned helicopter capable of operating from the smaller escort ships. It substantially increases the ship's weapons and sensor range.

- **New fuel.** The Navy distillate which is increasingly being used is cleaner burning and consequently produces less air pollution. It is to be used by all steam propelled non-nuclear ships. New ships since 1970 have been equipped to burn Navy distillate and many other ships have been converted. Another advantage: Firesides can be inspected and cleaned in much less time than was formerly required.

- **Pressure-fired boiler.** This is about a third the size of a conventional boiler. It is fully automatic and has an extremely quick response.

- **Naval tactical data system (NTDS).** This system gathers all information available from all sensors in the area and illustrates it in a compact visual display to aid commanders in decision making.



Top left: A Sea Sparrow blast test vehicle emerges from the Basic Point Defense Surface Missile System (BPDMS) shipboard launcher. Above: The AN/SQS-35(V) variable depth sonar is seen aboard the USS Francis Hammond (DE 1067). This sonar installation is part of the Navy's program of providing additional combat capability for its surface ships.



## DESTROYERS in the 70's



VADM Thomas R. Weschler, USN



RADM Ralph S. Wentworth, Jr., USN

# A FLAG OFFICER'S PERSPECTIVE

On the foregoing pages, *ALL HANDS* has covered some of the interesting innovations that have been happening in the Destroyer Navy. What follows are a flag officer's views of what's current and what's in store in the 70s. Vice Admiral Thomas R. Weschler has just completed a tour as Commander Cruiser-Destroyer Force, U. S. Atlantic Fleet, the nation's largest type command, composed of some 120 ships and 40,-

000 men. VADM Weschler's new assignment will be as Director of Logistics, Joint Chiefs of Staff, Washington, D. C.

He will be relieved as ComCruDesLant by Rear Admiral Ralph S. Wentworth, Jr., who also has a lengthy association with the Destroyer Navy, in DD, DE and DLG types, Destroyer Flotilla Eleven, and as Commander Cruiser-Destroyer Group Two.

Here are excerpts from a recent interview with VADM Weschler:

During the present decade, the United States can expect much of ships whose hull numbers begin with the letter "D". With the Army decreasing, and Air Force overseas basing being reduced, the Navy will be relied upon more and more to project the national presence. To do this, destroyers are needed as a relatively inexpensive method of supporting other naval forces.

Destroyers also play a vital role in dealing with the threat of submarines, surface ships and aircraft. This covers the spectrum from guns to torpedoes, to missiles. Although no single system can expect to solve the problem on its own, the destroyers can contribute to almost every means of countering these threats. Together with sonar for detecting submarines, modern destroyers are being equipped with surface-to-surface and surface-to-air missiles to combat both surface and air threats.

The new LAMPS (for Light Airborne Multi-Purpose System) helicopters are also expanding the destroyer's standoff capability in ASW, surface and air warfare, LAMPS helps make the destroyer of this decade a weapons system that can detect and defend earlier, or pursue and attack quicker, than any of its predecessors. Unless there is an unforeseen advance in submarines, the destroyer is now—and is for the foreseeable future—a key part of our ASW team.

As of today, the DD 692/710 class ship is still the largest group of destroyers in the Force. These ships are now more than 25 years old and, obviously, have been meeting our national commitments. With the scaling down of the armed forces, however, the number of these ships is decreasing. As one ship goes, it is not always replaced by another, which makes meeting our commitments increasingly difficult.

This, of course, stands to reason. The declining ratio of ships to commitments was foreseen in the 50s together with a lack of modern sensors so the process of FRAM (Fleet Rehabilitation and Modernization) was begun as a corrective measure. Most of the DD692/-710 class were FRAMed, but this updating has, by now, served its purpose. Although the shipbuilding program of the late 50s brought new ships to the Fleet together with new weapons, sensors and increased capability, nothing was planned with which to replace the old general purpose destroyer. By Oc-





tober 1974, however, the first of the new *Spruance* class destroyers (DD 963) is scheduled for delivery.

A total of 30 *Spruance* class destroyers is scheduled to be built by FY 1978. These ships will displace 7000 tons fully loaded yet will berth 50 fewer men than today's destroyers. The arrival of the *Spruance* class will result in the phasing out of the remaining FRAM destroyers in the Fleet and, by 1978, is expected to give the Navy a modern destroyer force capable of contributing to essential control of the seas.

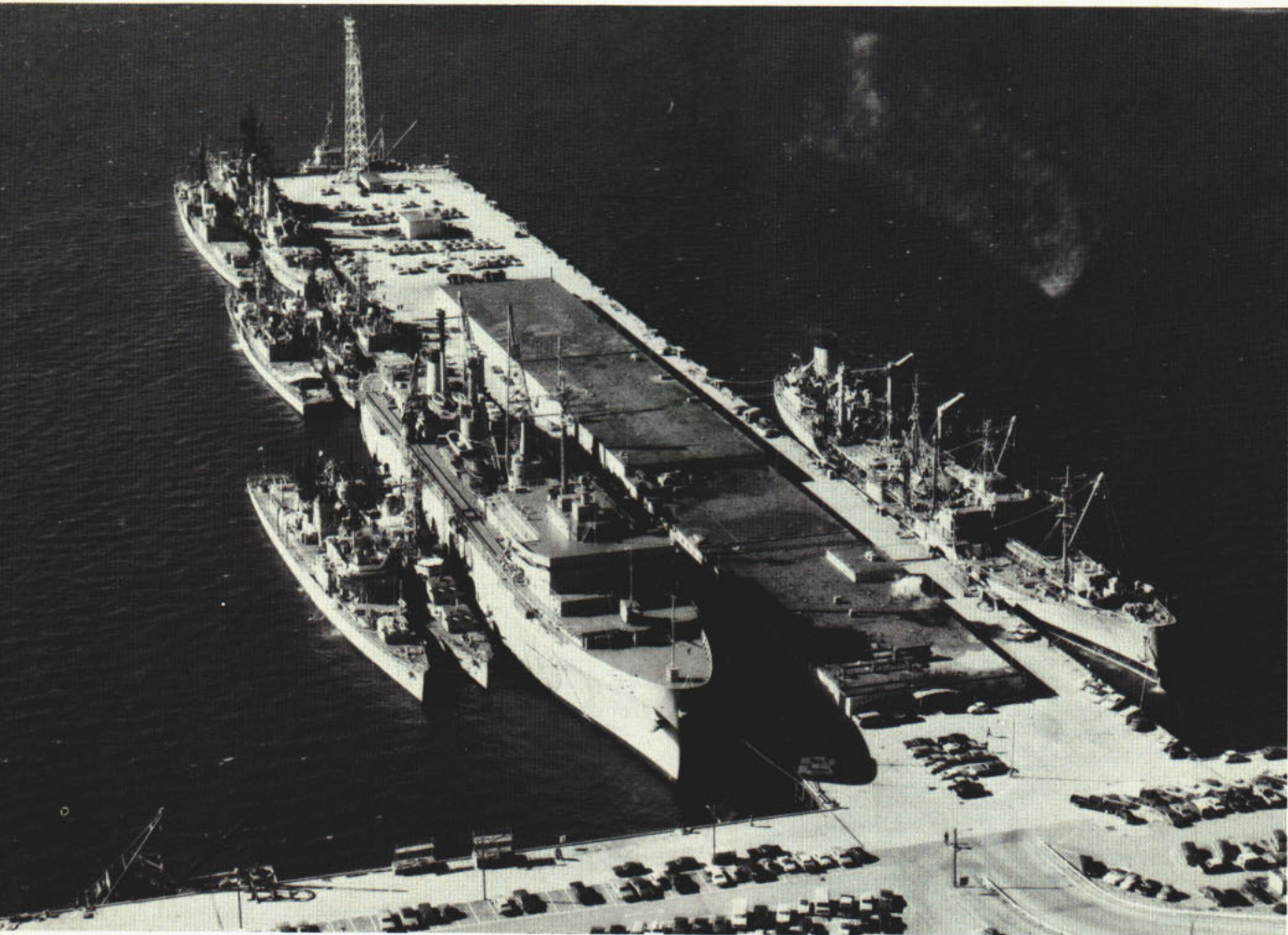
A new patrol frigate is also scheduled to join the active Fleet about 1977. It is visualized as a relatively inexpensive antisubmarine and anti-air escort ship of under 4000 tons.

In the ocean escort construction program (DE 1052 class), of the 45 ships in the class there are 22 hulls slated for the Atlantic Fleet. At present, the Atlantic Fleet has 14 of the 1052 class in commission. Eleven of these 14 are fully operational. By January 1975, all of the 1052s should be in commission and operational.

The DE 1052 class of ships has the SQS-26 which is considered to be the world's best active sonar. In addition to surface search radar and electronic countermeasures equipment, the new DE 1052s are now having new gear added—LAMPS, for example—to give increased sensor range and weapons delivery capability. Also being added on some ships of this class are the Basic Point-to-Point Defense Missile System and the Interim Surface-to-Surface Missile System.

There is also considerable possibility in the future development of the DE 1052 class. Other, more specialized systems such as an electronic missile system, a passive sonar system, close-in weapons system and some form of CHAFF-ROC launcher are possible additions already being considered for the DEs.





# TENDING THE FLEET

uss *Puget Sound* (AD 38), the latest ship of her class to join the growing force of tomorrow's Navy, represents a new type of tender with capabilities far surpassing those of earlier vessels designed to support the destroyer Navy. *Puget Sound* is designed to repair and furnish logistical support to destroyers and ocean escorts as well as the latest nuclear powered guided missile frigates now entering the Fleet.

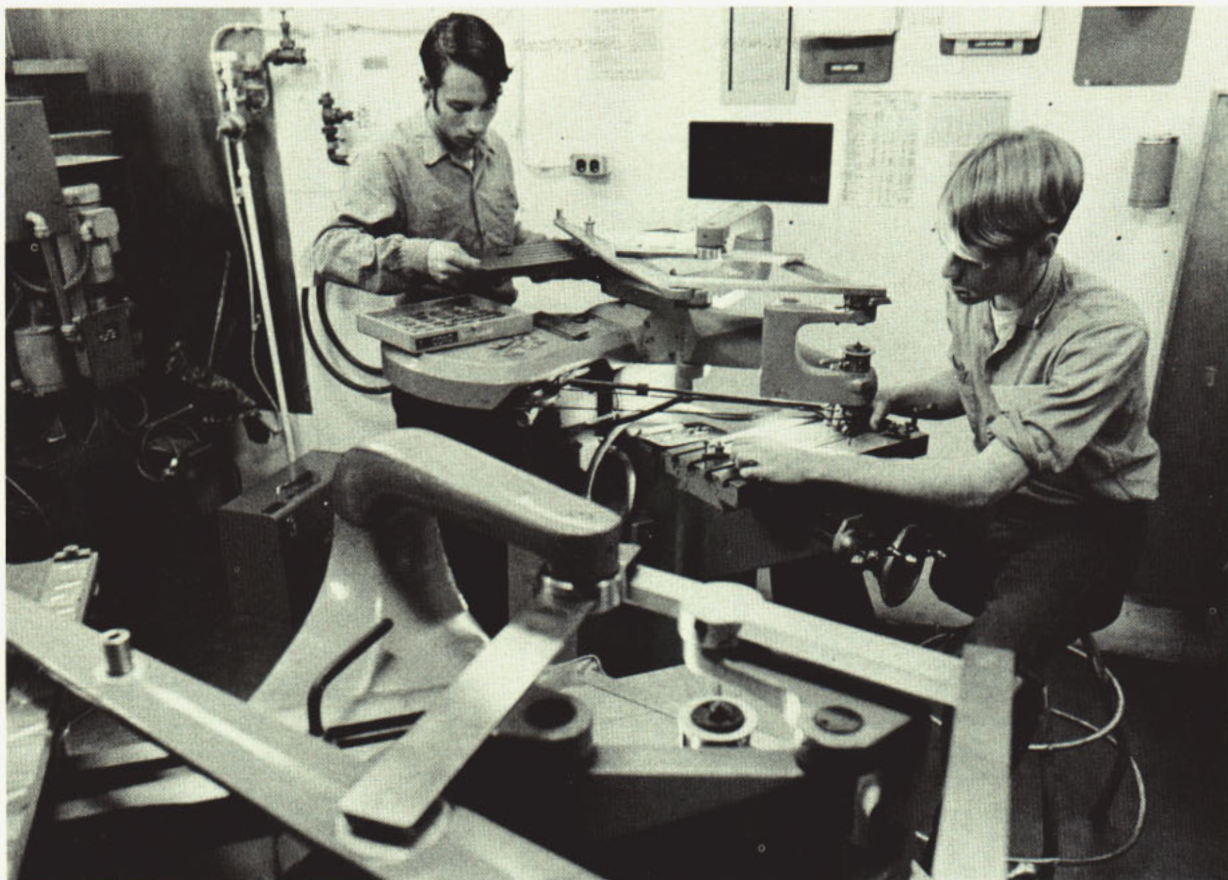
The tender is admirably equipped to meet the needs of a modern destroyer force. Displacing more than

20,000 tons with an overall length of 643 feet, *Puget Sound* is nearly 5000 tons heavier and 160 feet longer than the previous class of tender now serving the force.

The ship's high pressure boilers generate enough steam to heat a city of 10,000 people. Her four generators provide sufficient electrical power to light a city with a population of 50,000 while her evaporators produce 200,000 gallons of fresh water daily—enough to supply the average needs of 8000 people.

The vessel's repair facility is equipped to support





Left: In Newport, R. I., the destroyer tender USS Puget Sound (AD 38) is moored alongside a pier with adjacent destroyers. Above: Among the versatile equipment aboard the tender is an embossing machine used to compose signs. Below: Perhaps the ship's most important spaces are its machine and maintenance shops. Here FA James Monett works with an electric motor.

nuclear powered as well as conventional ships.

Communication, radar and navigational equipment is also repaired with ease in the ship's many specialized repair shops. Major repairs to heavy equipment are made possible by the use of two 30-ton cranes supplemented by two three-and-one-half-ton "traveling" cranes.

Supporting the ship's repair force is a supply department with an almost endless inventory of spare parts and materials and these are valued at more than \$1.5 million. Parts are stored in more than 60 store-rooms with a total capacity of more than 63 thousand cubic feet, or enough space in which to store 70 automobiles.

With a crew of 135 officers and 1671 enlisted men, *Puget Sound* is one of the largest and most modern repair ships ever built for the Navy.

—Story and Photos by PH2 Rodger C. Anderson







## **Meet TOM HART: NEWEST MEMBER OF THE ATLANTIC FLEET**

*Thomas D. Hart* (DE 1092) arrived at the Boston Naval Shipyard early in June after a fast three-day delivery trip from New Orleans where she was launched in August 1972. She was accepted for the Navy by her prospective commanding officer on behalf of the First Naval District's commandant and scheduled for commissioning ceremonies near *USS Constitution* in July.

Designed to accommodate weapons systems of the future, *USS Thomas D. Hart* already is equipped with anti-submarine warfare features which include the SQS-26 bow-mounted sonar, the SQS-35 Independent Variable Depth Sonar (IVDS), antisubmarine rockets (ASROC), four Mark 32 torpedo tubes and, for anti-air and shore bombardment purposes, rapid-fire five-inch, 54-caliber, single gun mounts. All the ship's operational spaces are air-conditioned.

As with other ships of her class, *Hart* completed a







Left: Thomas D. Hart (DE 1092) arrives at the Boston Naval Shipyard in June 1973. Below: USS Hart is one of the latest in the long line of "Knox" class of escort ships shown here, whose construction was initiated with building of USS Knox in 1969.



10-week fitting out and, in August of this year, began two months at sea undergoing shakedown training, weapons acceptance trials and electronics performance tests.

Early next year, *Hart* will enter a shipyard for post-shakedown and will be modified to accommodate an antisubmarine warfare LAMPS helicopter and its support crew. The work will require five months, after which the ship will be even better prepared to assume an ASW role.

*Thomas D. Hart* is 438 feet long and has a 47-foot beam. Her maximum draft is 25 feet and she displaces 4100 tons fully loaded. She is powered by a single five-blade propeller driven by steam turbines which can develop 35,000 shaft horsepower. She is capable of speeds in excess of 27 knots. *Hart's* crew consists of 16 officers and 228 enlisted men. Norfolk will be her home port.





**A veteran recruits:**

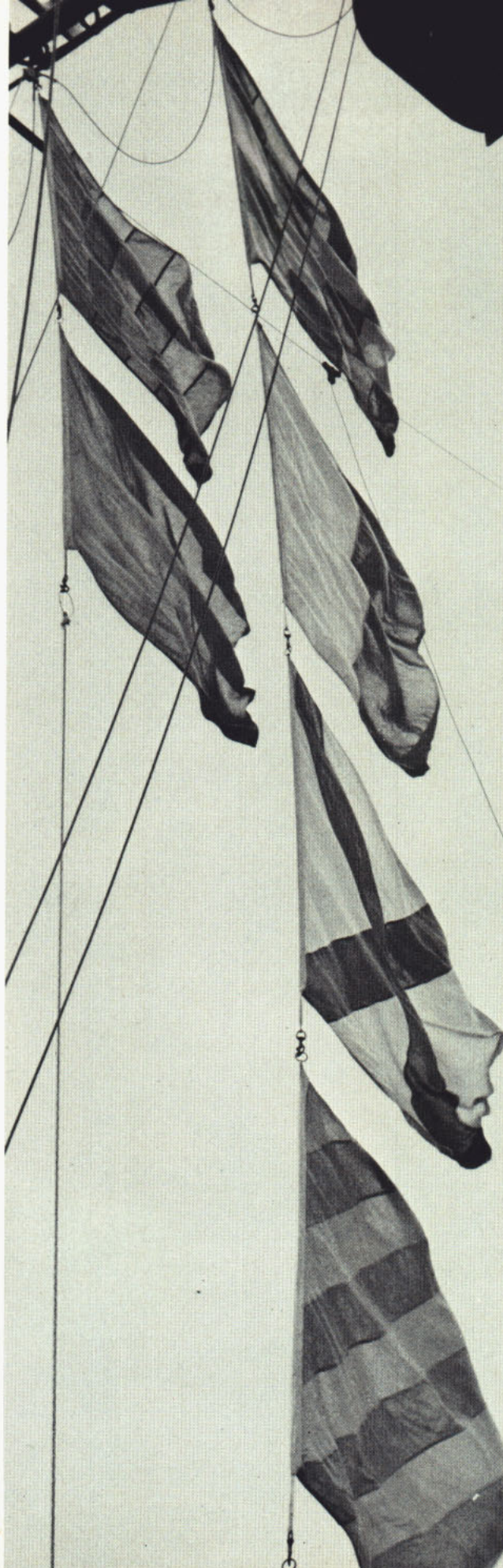
# GARY GO NAVY!

A destroyer is a versatile ship. But versatility is also subjected to the test of time, so when a ship has been operating for some three decades she can establish something of a record for diverse missions.

The crewmembers of *uss Thomas J. Gary* (DER 326) don't lay claim to any records, but they feel confident about initiating new ways that her services can be put to better use.

Hitting the water in 1943, *Gary* is one of the Navy's oldest destroyer escorts (officially, the title is escort ship) and through the years has proved herself capable of holding her own.

*Gary's* latest assignment was to take on a comprehensive recruiting job. In a period of one week, the DER held open house six times, made four "Go-Navy" cruises, and gave more than 3000 people a new and appreciative view of today's Navy.





Facing page far left: USS Thomas Gary (DER 326) at sea. Facing page left: Signal flags spell "GO NAVY" as the ship gets underway for her recruiting operation. Right: LCDR Charles E. Ryan, commanding officer of Gary, accepts a flag from the bunnies of the Miami Playboy Club. Below: Also in Miami, RM2 Richard Samples receives Gary's Sailor-of-the-Month award from local TV personality Walter Cronise. Bottom: Prospective recruits board the escort vessel for a tour of her spaces.



The week's activities were spent between two ports—Fort Lauderdale and Miami, Fla. Gary began her cruise on a Monday evening from Key West and reached Fort Lauderdale the next morning. There, the ship held open house until Wednesday, when about 80 potential recruits from the area's high schools were taken to sea for a cruise.

Students observed routine shipboard life—daily chores, watchstanding—seeing firsthand what the recruiters had talked about previously. Dinner on the mess decks was followed by tours throughout the ship; each person gained an insight into the many different jobs available to Navymen. Before the ship had returned to port, Lieutenant Commander Charles E. Ryan, the commanding officer, had convinced a number of students to "Go Navy" and enlisted three recruits.

The next day, Thursday, Gary sailed to Miami, where open house visiting and ship's cruises went on through Sunday afternoon. It was on Saturday that the largest number visited the ship. More than 100 civilians were taken to the "blue waters"—a large group for a ship with a crew of less than 200.

On Saturday also, Rear Admiral Emmett H. Tidd, Commander Navy Recruiting Command, paid a visit to the escort. His remarks of appreciation to Gary's crew for their spirit and cooperation were more than token gestures. The admiral's presence underscored the significance placed on this type of recruiting effort.

The crew, too, had some unexpected bonuses, when five "bunnies" from a local club came aboard for the Saturday cruise. The girls showed considerable interest in all phases of the ship's operation and the crewmen reciprocated the interest. Gary's Sailor of the Month, Radarman 2nd Class Richard Samples, was later treated to a VIP evening at the Miami club.

The ship has a busy history and has done a lot of sailing since she was first commissioned in August of 1943. In World War II, Gary escorted convoys from the West Indies to North Africa and when emphasis shifted to the Pacific, she operated as an escort between Pearl Harbor and the Republic of the Philippines.

Her conversion to a radar picket ship came in 1956. She then operated as a unit of the North American Radar Air Defense Command and later, served as

the flagship for the Thresher search group. Gary participated in Operation Deep Freeze from 1965 to 1967. The ship is currently the flagship for Commander Destroyer Squadron 18.

On her recent week-long Go-Navy cruise, Gary proved that it doesn't necessarily take a modern "show ship" to sell the Navy. A true picture of shipboard life depends as much on the crew as the ship herself. Credit for a good show goes to the splendid efforts of Gary's men who were always courteous, helpful and ready to answer any questions that visitors had.

The crew proved that the best way to good relations is thoughtfulness and a ready display of teamwork and professionalism.







## DD'S: A THUMBNAIL HISTORY

This year, come October, destroyers will be celebrating their 71st birthday. They began coming down the ways shortly after America was welcoming the 20th century into existence.

There were five in the beginning—*Bainbridge*, *Barry*, *Chauncey*, *Dale*, and *Decatur*. Their hull numbers ranged from DD-1 to DD-5, respectively. That was back in 1902 and they were called "torpedo boat destroyers." Armed with two torpedo tubes, two 3-inch guns and five 6-pounders, they had a displacement of about 400 tons and traveled at 28 knots.

These were America's first destroyers. Named for naval heroes (except for the new nuclear frigates), the destroyers have proven themselves both resolute and versatile. Their development was the direct result



USS Bainbridge (DD 1)

of the successes scored by their predecessors, the torpedo boats.

Sixty-eight destroyers were constructed from 1908 to the beginning of World War I in 1917. They fully proved their worth when German U-boats posed a serious threat to allied shipping, being very capable in antisubmarine warfare with the development of the first underwater listening device and depth charges.

Defensive antisubmarine patrol and convoy escort

## HELICOPTER SQUADRON ONE: 25 YEARS OF SERVICE

Helicopter Squadron One (HC 1), the Navy's oldest, marked its 25th anniversary recently. At the time of the squadron's commissioning at NAS Lakehurst, N. J., the helicopter was in its infancy, and its men were to be pioneers in establishing procedures for the operation of Navy helicopters.

The squadron's first assignments were on arctic survey ships, icebreakers and other types of oceanographic ships. However, the Korean conflict canceled the research, and the squadron's job became more diversified. It was at this time that HC-1 began to realize its potential to maneuver in almost any situ-

ation by innovating rescue techniques, both over water and land, of downed pilots. During the Korean conflict, the squadron completed almost 650 rescues, many of which were behind enemy lines or under intense hostile fire. In recognition of its strategic importance during this period, the squadron was awarded the Presidential Unit Citation.

In the years following the Korean conflict, HC-1 provided support services in the Pacific—continuing to perfect its rescue techniques until it became known as the Pacific Fleet "Angels." But rescue was not its only mission and the men in the squadron pushed to expand the role of the helicopters.

By 1965 the squadron was tasked with all helicopter services in the Pacific Fleet except antisubmarine warfare. Their mission included aircraft carrier plane guard, vertical replenishment, logistics and close ground support, besides search and rescue.

Two years later, four new helicopter squadrons were commissioned—all formed from the assets of HC-1. These newly born squadrons were, in effect, specializations of fields in which HC-1 had operated. Helicopter Squadron Three (HC 3) was for vertical replenishment; Helicopter Combat Support Squadron Seven (HC 7) excelled in combat search-rescue and fleet logistics; and Helicopter Attack (Light Squadron



became a primary mission of destroyers. Two hundred and seventy destroyers with the old flush deck, four-stackers, were commissioned between 1917 and 1922. Displacing about 1190 tons, the four-stackers had 150-man complements, four 4-inch guns, two .30-caliber machine guns and twelve 21-inch torpedo tubes.

By 1921, mass production techniques in U. S. shipyards provided the nation with the world's largest and most capable destroyer fleet.

In the years following, 40 destroyers were scrapped and another 200 sent to the mothball fleet. Not one destroyer was launched between 1921 and 1934.

The rapid escalation of German and Japanese maritime power in the late 30s prompted the reconstruction of our own dwindling surface forces. About 200 old four-stackers were recommissioned or brought out of reserve status and the construction of more modern "tin cans" went into full swing. By the end of the war, a total of 750 submarines were sunk by our forces, many of them by destroyers and destroyer escorts.

The Atlantic Fleet destroyers also took part in the invasion of North Africa as assault ships. Pacific destroyers took to surface combat, taking on battleships, cruisers, submarines, shore batteries and kamikazes.

Demonstrating their wartime pervasive presence, 44 destroyers were on hand in Tokyo Bay for the Japanese surrender. More than 50 destroyers and destroyer escorts were awarded Presidential Unit Citations.

Two specialized types of destroyers evolved in the intervening years between World War II and the Korean conflict. These were general purpose destroyer

escorts designed primarily for antisubmarine warfare and radar picket destroyers, carrying increased radar and communications gear.

The more populous destroyer family had limited involvement in the Korean conflict, performing neither their antisubmarine warfare nor antiaircraft functions. However, they did provide gunfire support for the United Nations Forces.

Recent years have seen the continued development of destroyer types as the demands of modern technology have become greater. The addition of anti-submarine rockets, antiaircraft missiles and antiship missile defense missiles to the destroyer arsenal has required the addition of the new types and allowed for the evolution of advanced tactics at the same time.

The conflict in Southeast Asia has given the modern destroyer an opportunity to demonstrate the capabilities of its sophisticated sensor and weapons systems. Whether providing close gunfire support, acting as air intercept controllers, engaging attacking aircraft, or rescuing downed pilots, Atlantic and Pacific Fleet destroyers have given a fine account of themselves.

The primary missions of the destroyers remain antisubmarine and antiaircraft warfare in support of major task forces or surface/shore bombardment. Versatility is still a key word and the destroyers retain the capability to do everything from search and rescue to recovering space capsules.

The past seven decades have provided destroyermen with a wealth of experience and knowledge that will keep them ready for the future discharge of their peacetime and wartime responsibilities.

Three (HAL 3) served as inland airborne assault support. Helicopter Combat Support Five (now HSL 31) is used for training.

It has been a long flight for many members of HC-1, but the growth and diversification of the unit's mission have been rewarding. Now the squadron is involved with the *Apollo* recoveries—with four on its record. In June, Commander A. K. Fieser, command-

ing officer of the squadron, led a detachment in the recovery of the astronauts of Skylab II—as Helicopter Squadron One continued its mission in the forefront of the action.

Above: An SH-3G Sea King helicopter, part of Helicopter Combat Support Squadron One (HC-1), departs from the nuclear carrier USS Enterprise (CVAN 65) in the South Pacific.





# The history &





# tradition of the

# NAVAL

# RESERVE



Back in World War II, they called them "90-day wonders"—young Naval Reservists like Ensigns Herbert C. Jones and Francis C. Flaherty. They had earned their commissions through wartime three-month training programs.

Herb Jones had been in the Naval Reserve since 1935, when he enlisted at the age of 17. He was 22 when he reported for active duty in the summer of 1940. Francis Flaherty enlisted in the Reserves in July 1940, at the age of 21.

Jones graduated with the first V-7 midshipman class to complete training on board the old *uss Illinois* (later renamed *Prairie State*), a floating armory long used for Reserve training at New York City. He was commissioned in November 1940 and assigned to *uss California* (BB 44). Flaherty took his midshipman training at Northwestern University; he was appointed an ensign in December 1940 and assigned to *uss Oklahoma* (BB 37).

When Pearl Harbor was attacked on 7 Dec 1941, *California* and *Oklahoma* were both in battleship row. Ensign Jones was just about to relieve the officer of the deck as the first wave of Japanese planes swooped in, hitting *California* with a torpedo and a bomb. Fuel spurted from the ship's ruptured tanks and burst into flame. Jones dove into a hatchway and slipped and slid along the oily decks to rescue an injured man before being temporarily overcome by smoke and fumes. When he came to, he saw an antiaircraft battery without a leader, staggered to his feet and took command, firing the guns at the second wave of Japanese planes until all the ammunition was gone.

The ammunition hoist had been knocked out, so he organized some volunteers to pass ammunition by hand up to the battery.

The shells had just begun to reach the guns when a bomb hit *California* amidships and Ensign Jones was mortally wounded. Two of his men started to carry him to safety but he ordered them to leave him so they could save themselves before the magazines went off. He died shortly afterward.

On *Oklahoma*, Ensign Flaherty's battle station was in one of the forward gun turrets. His ship took three torpedo hits almost immediately after the first Japanese bombs fell and, as *Oklahoma* began to capsize, two more torpedoes struck home. The word was passed to "Abandon ship," but the emergency lights had been knocked out and the men in Flaherty's turret crew were losing their way in the darkness as water poured into the turret and their world turned upside down. Flaherty grabbed a flashlight and kept it pointed at the ladder while his crew scrambled to safety. They made it, but he didn't have time to get out. He went down with the ship.

Naval Reservists Jones and Flaherty, both of whom were posthumously awarded Medals of Honor, represent an American tradition that goes back to colonial times. They were ordinary citizens who became extraordinary Navymen when their country needed them.

THAT TRADITION GOES back nearly 300 years. Even before the United States became a nation, fishermen and merchant seamen from the English colonies in America played an important part in the long series



of wars that England and France fought with each other in North America in the century preceding the Revolution. These early "naval reservists" participated in several large, combined military-naval operations against French settlements in Canada, including expeditions against Quebec in 1690 and 1759, and against Louisburg in 1745 and 1757-58.

Although America had no Navy of its own when the Revolution began, all 13 of the original colonies had strong maritime ties and there were many men in our then small population who followed the sea for a living. There were also several thousand American-owned ships, many of them already armed for protection against pirates.

Many of these ships were taken over by the various state navies or the Continental Navy, but far the greater number were commissioned by the states or the Continental Congress to operate as privateers—privately owned ships, manned by civilian crews, which were authorized to cruise against British shipping.

Since the crews of the privateers shared in the prize money from the ships and cargoes they captured, most experienced seamen preferred privateering to service in the low-paying Continental or state navies. As a result, more than 2000 ships and over 70,000 men were engaged in privateering, while the peak strength of the Continental Navy was probably never more than 3000 men. The cargoes the privateers captured were an important source of arms and supplies for the American Army, and the effectiveness of the privateers was soon reflected in soaring insurance rates on British shipping and supply problems for the British Army.

IN THE WAR OF 1812, many American seafaring men again went to war as civilians in the crews of privateers and, once again, the privateers caused serious problems for Great Britain. One good example was the action fought by Captain Samuel Chester Reid and the 90-man crew of his brig *General Armstrong* at Fayal in the Azores.

Captain Reid, who had first gone to sea at the age of 11, had served for a while in the U. S. Navy as an acting midshipman under Commodore Thomas Truxtun in the West Indies during the naval war with France. As a privateer, he was on his fifth cruise in *General Armstrong* when he put in at Fayal on 26 Sep 1814.

About sunset of the same day, three large British warships arrived—the 18-gun *Carnation*, the 74-gun *Plantagenet* and the 38-gun *Rota*. On board they carried some 2000 troops who were supposed to become part of an invasion force then being assembled in the West Indies to attack New Orleans.

Captain Reid, whose guns consisted of just six nine-pounders and an old 42-pounder named "Long Tom," sensed trouble, even though Fayal was a neutral port. He moved his ship in close to shore, where the big British ships would not be able to come alongside,



SAMUEL CHESTER REID

and he made preparations for repelling boarders.

Before long the British ships began lowering armed boats, and at about dusk, four of them, filled with men, drew within hailing distance. Reid warned them to stand off, but they kept coming, and the American ship loosed a storm of grapeshot. The British answered with small arms and swivel guns mounted on two of the boats, then withdrew.

Around midnight, the British attacked again—but with more heavily armed craft and a much larger force. Reid figured they had at least 12 boats and some 400 men. This time the battle lasted 40 minutes before the would-be boarders were again driven off.

Next morning, one of the British ships got within range and opened up with her big guns. Reid returned her fire, but he knew further resistance would be useless, so he attempted to scuttle his ship and took his men ashore. As soon as he and his men were gone, British boarding parties took over and set fire to the troublesome little American ship, but they had paid dearly for their victory—120 British dead and another 180 wounded. Reid's losses were only two dead and seven wounded.



Incidentally, Captain Reid's service to his country did not end there. In 1818 he came up with a plan for the system we now follow to represent new states on the American flag. At that time, the U. S. flag had 15 stars and 15 stripes, a design which had been in use since 1795, after the 14th and 15th states had joined the Union. It was Captain Reid's idea to go back to the present 13 stripes, honoring the 13 original colonies, but to add a new star to the blue field whenever a new state entered the union.

By the time the Civil War began, 34 states had been admitted to the Union, and the nation had spanned the continent. As more and more settlers moved inland and westward from the original 13 seaboard states, the percentage of seafaring men in the total population became smaller and smaller, which presented a real manpower problem when the Union Navy began expanding in 1861. Although President Thomas Jefferson had suggested the establishment of a naval militia as early as 1805 nothing had come of the idea, and when war broke out there was no naval reserve of any sort. Many men who did have experience at sea had been lured into the Army by enlistment bonuses.

To meet the need for officers, a sort of Naval Reserve—the Volunteer Navy of the United States—was established by an Act of 24 Jul 1861, which authorized the temporary appointment of acting lieutenants, paymasters, assistant surgeons, masters and master's mates to serve during the "insurrection," as officers on "such vessels as may be deemed necessary

for the temporary increase of the Navy." A total of about 7500 volunteer officers served during that war.

Most of these officers came from the merchant service, but there were others who were sadly lacking in seagoing experience. As one naval historian puts it:

"Many of the inexperienced officers acquitted themselves with credit, zeal and fidelity, but unfortunately not all of them were fitted for the naval service. This was especially true of the engineer corps. One of the acting engineers, for instance, was a village schoolmaster from the up-country of New Hampshire, whose knowledge of marine engineering had been gained from a picture of a condensing engine in a textbook on natural philosophy common in the schools of New England. He introduced into the service one of his favorite pupils, whose knowledge of engineering was, if possible, even more rudimentary."

The need for enlisted men was so great that Admiral David D. Porter later referred to the early years of the Civil War as a time "when there was no naval militia to draw from, and Union ships lay unmanned while Confederate ships were sweeping Northern commerce from the oceans." Congress finally tried to meet the situation by authorizing the Navy to draft all seamen who had entered the land service.

DESPITE THE LESSONS OF THE Civil War, the Navy saw little need for a Naval Militia or Naval Reserve in the peacetime postwar years. However, in 1873 a group of former naval officers got together to advance a plan for a Reserve Corps composed of ex-naval officers from the Civil War who could be called to active

"in time of emergency:  
ordinary citizens,  
extraordinary sailors..."







duty in the event of war. Gradually, through the 1870s and '80s, the interest in forming some sort of naval reserve grew and, finally, on 17 May 1888, the governor of Massachusetts approved an act establishing a naval battalion as part of the state militia. New York, Pennsylvania and Rhode Island followed in 1889, and before long other seacoast and Great Lakes states also saw the need for such units. By 1897, 16 states had a naval militia in one form or another.

THE FIRST FEDERAL FINANCIAL AID to the movement came in 1891, when Congress passed a Naval Appropriation Act including \$25,000 earmarked for arming and equipping naval militia. The Office of Naval Militia was set up in the Navy Department to administer the program and ships, material and equipment were lent to the units.

By 1894, the movement had reached the point where the Secretary of the Navy was given authority to lend each state having a naval militia one of the Navy's older ships, as well as equipment, to "promote drills and instructions."

In 1898, the year of the Spanish-American War, the

militiamen proved themselves an important body of trained personnel. Governors of the various states granted officers and enlisted men leaves of absence so they could serve with the Regular Navy.

Within six hours after it received notification, the First Naval Battalion of New York reported for duty—fully armed and equipped—on the auxiliary cruiser *uss Yankee*. Twenty hours after it was called, the Massachusetts unit arrived on board the auxiliary cruiser *uss Prairie* at New York.

The militia units were able to furnish 4216 of the 10,375 additional men taken into the Navy at the war's outbreak. By the time the Spanish-American War was over, 19 states were maintaining militia organizations, with a total strength of 492 officers and 6300 enlisted men.

THE VALUE AND EFFICIENCY of the members of the naval militia had been so thoroughly demonstrated during the war that the Navy Department recommended the creation of a national Naval Reserve, but it took a while to iron out the details. The first major step was not taken until the Naval Militia Act of February 1914, which required all naval militia states to organize their units to conform to a plan prescribed by the Navy Department. A Division of Militia Affairs was established in the Navy Department in April 1914 to assume the work of the old Office of Naval Militia. Then, on 3 Mar 1915, Congress passed the legislation which first established a Federal Naval Reserve—to be composed of enlisted men who had seen service in the Regular Navy. The response was limited, and on 29 Aug 1916, with World War I already underway in Europe, Congress passed an act establishing a new Naval Reserve Force and federalizing the Naval Militia.

During the First World War, about 30,000 Reserve officers and 300,000 enlisted Reservists served on active duty. Among them were 12,000 women Reservists who worked as "yeomanettes" in Navy and Marine Corps offices and a group of flying enthusiasts from Yale University who had bought their own plane, learned to fly at their own expense and volunteered their services to the Navy before the United States had entered the war. This First Yale Unit pioneered the modern Naval Air Reserve.

THE WORLD WAR I Naval Reserve also produced four recipients of the Medal of Honor, 315 officers and enlisted men who earned the Navy Cross for extraordinary heroism in combat, the Navy's only air ace of the war, the first naval aviator to be credited with the destruction of a German submarine and the first Navy pilot to shoot down an enemy aircraft.

Following the war, the Naval Reserve began to move closer to its present form of organization during the late 1920s and the 1930s.

By 1938 the drilling Naval Reserve numbered about 11,380 officers and enlisted men. About 19,500 others had signed up for the Volunteer Reserve, which was



not required to drill, and the Merchant Marine Reserve had about 6000 officers and enlisted members.

THE WORLD WAR II mobilization of the Naval Reserve on a voluntary basis began the following year, and by 12 Jun 1941, all members not in a deferred status had been called to active duty. By the end of the war, there were some 300,000 officers and 2.5 million enlisted men on active duty. More than three-fourths of them were Reservists.

When the war ended in 1945, many of these veterans joined Naval Reserve units back home. Hundreds of Naval Reserve training centers and other, smaller facilities were established to provide training in almost every phase of naval activity. Quarters were found in private, public and municipal buildings of every description—universities, city halls, fire stations and, in some cases, even jails. The World War II veterans were joined by younger, nonrated men who wanted to learn something about the Navy before they received orders to active duty.

In the nearly three decades which have passed since 1945, the Naval Reserve has continued to serve with distinction in times of crisis. During the Korea conflict over 130,000 Reservists from air and surface units answered the call to arms, and better than one out of four of the Navymen on active duty were Reservists. In one typical month of air operations in Korea, three-fourths of the 8000 combat sorties flown were by Naval Reserve aviators. Again, during the Berlin Crisis of 1961, 40 Naval Reserve ships were called to active duty along with their crews, and 18

Air Reserve squadrons were activated.

ALTHOUGH THERE WAS NO large-scale mobilization of the Naval Reserve during the conflict in Vietnam, six Naval Air Reserve squadrons and two Reserve Seabee battalions were mobilized in 1968 to serve for a year on active duty. In addition, many of the Navymen on active duty in Vietnam have been young Reservists in various officer programs or the 2x6 enlisted program, which calls for two years of active duty during a six-year Reserve enlistment. As of 1967, almost one out of seven Navymen on active duty were Reservists, and today the figure is about one out of 10.

The first naval officer to be awarded the Medal of Honor for action in Vietnam was a Naval Reservist—Lieutenant Vincent R. Capodanno of the Chaplain Corps. He was killed on 4 Sep 1967 while trying to help a wounded hospital corpsman directly in the line of fire of an enemy machinegun only 15 yards away.

In the 1970s more and more emphasis is being placed on the Naval Reserve as a key element in national defense under the Total Force Concept and, with the elimination of the draft and reductions in the size of the active duty Navy, America is banking heavily on a strong and effective Naval Reserve as a readily available back-up force for the full-time Navy. Judging from past performances, if that back-up force is ever needed in an emergency, you can safely bet that many of the "ordinary" citizens in our part-time Navy will turn out to be extraordinary full-time Navymen when the chips are really down.

—Jerry Wolff





# TYPICAL WOMAN NAVY OFFICER







If you were to meet Ensign Gwen F. Hall, who is a five-foot six-inch redhead, you might ask the typical question asked of most women officers which is, "Why did you decide to join the Navy?" She would probably answer something to the effect of "I joined so I could travel a bit and see the world."

With that average question and that average answer, you would probably walk away thinking ENS Hall was an example of an average naval officer. However, upon really getting to know her, you'd find out that she has some very unusual interests, hobbies, and even her job is somewhat unique.

First, let's look at Gwen's background. Her mother is an ex-Navy Nurse Corps officer and her father is a retired Navy aviator. He is one of the few living Medal of Honor holders, receiving the medal for his actions during the Battle of the Coral Sea. Her parents now live by a northeastern Oklahoma lake where her father is currently active in the Coast Guard Auxiliary. Gwen herself holds a license from the U. S. Coast Guard to operate a commercial vessel up to 15 tons on the Arkansas river and its tributaries.

Gwen has two younger sisters, who are currently working toward obtaining their degrees as Registered Nurses. Gwen has a bachelor of arts degree in geology and anthropology from the University of Kansas at Lawrence. She spent two and one-half years assembling dinosaurs at the Chicago Field Museum. And if all of this isn't enough, she holds a second degree black belt in Korean style Tai Kwon Do Karate. She earned her first black belt in 1968 and received her promotion to second degree in January 1972.

In February 1972, Gwen went to Officer Candidate School, Newport, R. I. After her commissioning in June, she was assigned as one of the Personal Services officers for NAVADCOM, Great Lakes. On her way to her new command, she stopped off at Rockford, Ill., to watch the Korean Karate Tournament. She felt very fortunate to be able to attend this tournament since this was the first time the competition had ever been held in the continental U. S. and, also, she knew her old karate instructor would be there.

She arrived in Rockford about an hour before the event, so she had time to look up her instructor before the competition began. He convinced Gwen that she should enter the competition. Somewhat reluctant because she was tired after having driven for five straight hours to get to the event on time, she also felt that she was a little out of condition after having been on leave for a couple of weeks and not practicing as





she usually does. But he finally convinced her at least to try. Needless to say they were both very surprised and very pleased when Gwen was announced to be the winner of the Gold Medal in the All-Tae Kwon Do Black Belt Women's competition.

After arriving at her new command, ENS Hall decided to utilize her off-duty hours by instructing in karate. She had no problem getting a position at the Rockford School of Karate, Rockford, Ill., since she has several references as a result of having taught





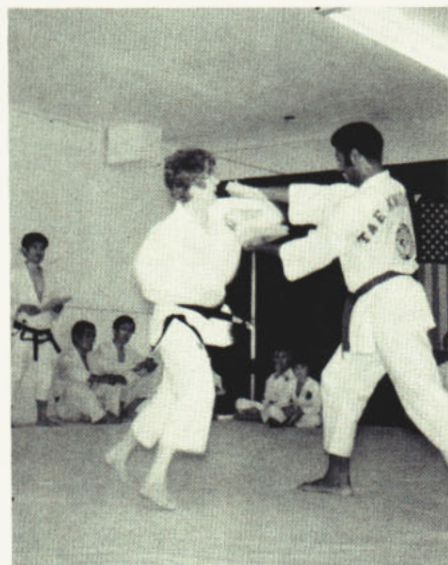
karate since 1967 in seven different schools. Her reputation grew and now she is also teaching karate, by appointment, on the Great Lakes Naval Base.

Gwen soon became interested in taking a course offered by Coastal River Division (COSRIVDIV) 21, which is usually offered only to those who must qualify for the Fast Patrol Boat OOD underway. Although she was in no way attached to this division, they welcomed her to take their course. She has qualified as a sharpshooter with the M-16 rifle, and does her practice on the Marine Corps Range. The course also includes water survival, navigation, and qualification with the 81-mm mortar, 20-mm mortar, and the 50-caliber machine gun. All of this training has been on her own time.

Her command soon became aware of ENS Hall's off-duty activities and decided that perhaps they could best use her talents in their Security Division instead of their Personal Services Office. With her change of jobs, Gwen became the first woman line officer to hold such a position. As part of her new job, she helps question female subjects, she rides watch aboard security trucks, and she works with German Shepherd dogs, who sniff out marijuana (see *ALL HANDS*, August 1973, page 46).

No, ENS Gwen F. Hall is not an average naval officer, and the Navy is fortunate to have an officer with such a varied background as part of the team.

—Ensign Sandra L. Howes



Far left: ENS Gwen Hall during rifle practice, part of the PTF qualifications course for OOD underway which she is taking in her spare time. Above: ENS Hall at Karate lessons.



# ON THE SCIENTIFIC FRONT



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## **NOAA Discovers 24 Underwater Mounts Off Oregon-Washington in NW Pacific**

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Twenty-four previously unknown underwater mountains and several seamount chains have been dis-

covered in the northwest Pacific off the Oregon-Washington coast. The underwater mountains rise from 3000 to 5950 feet above the sea floor and at least four are a mile high. Marine geophysicists believe there may be thousands of similar features still undiscovered.

The two seamount chains border the Sedna Fracture Zone—a deep ocean-bottom rift. They consist of a high ridge directly north of the zone and a second, lower ridge farther to the north. Both ridges lie between 450 and 500 miles north of the Mendocino Fracture Zone, a major undersea rift in the northeast Pacific.

The discovery of the new seamounts came during an analysis of data gathered during a five-month survey of the sea bottom made by the Commerce Department's National Oceanic and Atmospheric Administration in 1971. Approximately one million square miles of the ocean were covered.

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## **Pump With Only One Moving Part Can Harness Power of Ocean Waves**

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Scientists at the Scripps Institution of Oceanography in California have harnessed the natural power of ocean waves with a simple device which can generate 1000 watts of electrical power.

The wave pump has only one moving part. It operates from a free floating platform—such as a buoy or a ship—and consists of a 200-foot plastic pipe with a one-way check valve inside near the top. As the pipe, mounted with most of its length below water, accelerates downward into a wave trough, water flows up past the check valve. When the wave peak swings the pipe upward, the water in the pipe is prevented

Left: Man and machine working together under the sea has naturally become an integral part of naval scientific research.



from flowing back down by the now closed check valve.

The water above the check valve is lifted into a tank aboard ship by the action of the next wave and this water is pressurized before being discharged through a turbine, thus producing useful power.

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### **New Anti-Exposure Suit Designed for Downed Navy Aviators**

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A new anti-exposure suit for downed aviators is finding increased use throughout the Navy. It replaces the old MK-5A and employs the principles of a diver's wet suit. The exposure suit was developed by the Naval Air Systems Command in conjunction with the Naval Air Development Center, Johnsville, Pa., and various aerospace physiology training units.

The time a downed aircraft crew member spends in water before rescue has been narrowed to between 15 and 90 minutes so modification of anti-exposure gear was indicated. The need was met by adapting the basic skin diver wet suit to meet aircrewman requirements. Characteristics included cold water protection, wear comfort and mobility while carrying out cockpit duties.

The new suit, which has been in general use in the Fleet for nearly two years, is made of a thin layer of closed-cell neoprene foam with air pockets that provide insulation. Lining the foam is nylon fabric which provides strength and elasticity which enable the wearer to don the suit easily and to wear it comfortably.

The suit is loose-fitting to provide comfort while the wearer is in a sitting position and has a lowcut neck to prevent riding up and chafing. The suit is shorter in front than in back to prevent bunching at the waist and the suit legs are bent to preclude binding.

The neoprene foam in the suit retains body heat in hot, cold and normal environments. A ventilating system is provided into which conditioned vent or blower air is introduced through fittings on the left side of the chest. Air is bled into a ducting system to ventilate the legs, arms and crotch. This air flows back over the body around spacer panels (which hold the suit slightly away from the body) exiting at the neck. With the air flowing through the system at a rate of six to 12 cubic feet per minute at an acceptable temperature and humidity, the wearer is thermally comfortable.

The suit fits snugly so that a minimum of water is allowed to flow between the body and the foam cover-all when the wearer is submerged.

Other anti-exposure gear used in conjunction with the ventilated wet suit includes polyvinyl chloride underwear, heavy wool socks, flight boots, nomex flight suits and inflatable mittens and hood. The nomex modified summer flight suit is worn over the ventilated wet suit and provides space for hood and mittens.

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### **Special Explosive Adapted for Lunar Use by Naval Ordnance Lab**

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The explosive used in eight charges placed on the moon during *Apollo 17* was discovered and developed at the Naval Ordnance Laboratory at White Oak, Md. The substance used was hexanitro-stilbene (HNS) and helped obtain a seismic profile of the moon.

The explosive was adapted for lunar use. It had to be carried safely to the moon, then be able to withstand extreme lunar temperatures without deterioration in the no-atmosphere environment. Bonded with teflon, the explosive could be formed in various sizes.

But *Apollo 17* wasn't the first occasion HNS had been used in lunar missions. It was also used in several cutting operations which permitted the descent and ascent of the astronauts in the lunar module after each of the *Apollo* landings.

During the *Apollo 14* and *16* missions, explosive charges of HNS in grenade launchers were also placed on the lunar surface. Months later they were launched on command from earth and monitored by seismometers when they were exploded.

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### **Test Technique by NRL Scientists Hints at Oxidation Process on Moon**

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Scientists at the Naval Research Laboratory (NRL) here have evidence that the green glass "spherules" brought back to earth by the *Apollo 15* astronauts were oxidized on the moon. And what is the significance of that?

First of all, this conclusion about oxidation is based on a test technique called electron spin resonance (ESR). All fine soils returned from the moon invariably have displayed an extremely intense ESR signal, which in the usual interpretation has been attributed solely to the presence of metallic iron.

NRL moon scientists say that a portion of this signal could in principle arise from an oxide of iron similar to terrestrial magnetite (lodestone). These findings now indicate that such iron oxides are indeed present in the lunar soil.

Lab tests conducted at NRL have shown that "magnetite-like" precipitates would result on lunar dust grains which underwent oxidation at temperatures near 650° C., as might be expected in the upper reaches of a volcanic fire fountain.

The NRL studies appear to provide direct evidence of a lunar surface oxidation process, possibly indicating that the interior of the moon has contained, and



may still contain, some oxidizing volatiles such as water.

## Seawater Battery Developed for Use in Arctic Oceanographic Experiments

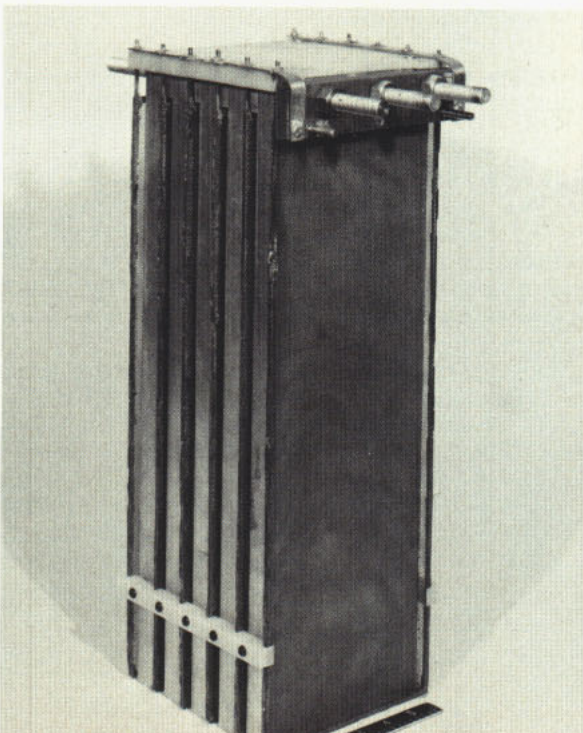
A special version of a seawater battery developed at the Naval Research Laboratory was scheduled in July for preliminary testing under the Arctic polar icecap in connection with scientific oceanographic experiments.

Two of the special batteries were placed on test in the Arctic Ocean at 83 degrees latitude. Both were designed to operate continuously for one year. The battery, which was developed by the Naval Research Laboratory, previously demonstrated its ability to operate for a full year in tests conducted in the Gulf of Mexico.

Such batteries would be used to power electronic instrumentation and telemetry equipment at remote unmanned sites across the polar icecap. A primary purpose of the electronic measurements is the logging of polar icecap flow by means of position location with the Navy *Transit* satellites.

The batteries are activated by immersion in seawater and would normally work in conjunction with a static converter power supply designed for many naval and marine applications. The battery is both economical and has an indefinite shelf life.

**Below:** The recently developed seawater battery will provide a compact, economical, and powerful source of energy for Arctic scientific experiments. **Right:** Dr. Louis A. Gebhard of the Naval Research Laboratory.



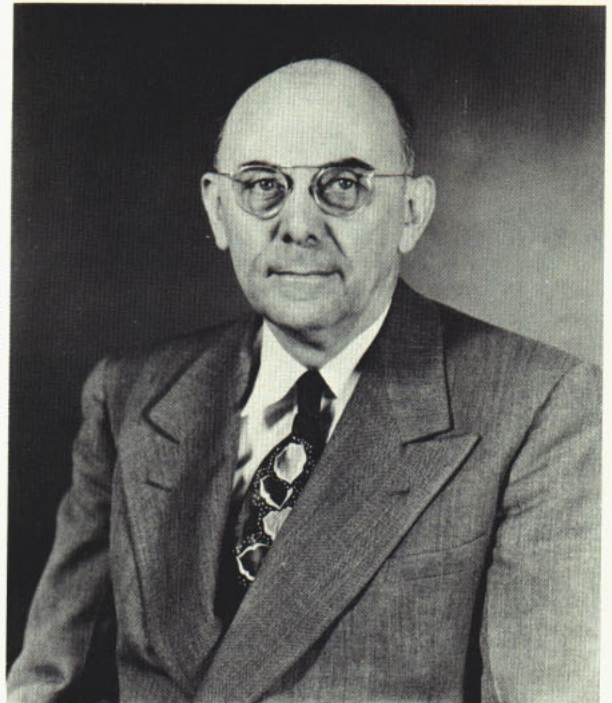
## Dr. Louis A. Gebhard of the Naval Research Lab, a pioneer in Lab Electronics

When the Naval Research Laboratory celebrated its 50th anniversary in July, there was one plank-owner still on board—Dr. Louis A. Gebhard who has been with the lab since its inception in 1923. In fact, Dr. Gebhard was engaged in naval research for six years before the laboratory's organization.

Dr. Gebhard continues to serve as a consultant to the Associate Director of Research in Electronics at NRL. From 1945 until his retirement in 1968, he was superintendent of the lab's Radio Division—the longest anyone has served as superintendent of a research division at the lab.

Under his guidance, the division produced a steady stream of ideas, inventions, equipment and systems which benefited the Navy, science, industry and other government agencies. During Dr. Gebhard's tenure, he was issued 90 patents, each marking a significant improvement in naval communications.

He was a pioneer in radio electronics and was associated with developing a voice transmitter which, in 1922, broadcast, for the first time, an address by the President of the United States. In 1924, he built the first high-powered, crystal-controlled transmitter in the world. A year later, a radio pulse transmitter of his design was used for the first accurate measure





of a height of the ionosphere. This pointed the way for the ultimate worldwide use of pulses in radar.

Dr. Gebhard was, in fact, responsible for developing the Fleet's first radar—the model XAF which was used in Fleet Caribbean exercises early in 1939.

Now, about 57 years from the beginning of his career, Dr. Gebhard is preparing a document which sets forth the significant accomplishments of the Naval Research Laboratory in radio electronics.

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### **Naval Ship Research and Development Center Develops New Aluminum Hawser Connections**

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When light weight, flexibility and inertness to sea water are required, nylon hawser is widely used throughout the Navy. The connection to the hawser, however, uses knots or splices that may be difficult to handle under water or may be unreliable.

For that reason, the Naval Ship Research and Development Center's Annapolis Laboratory has developed a procedure for shipboard use by attaching aluminum end fittings to the hawser with epoxy resin. By so doing, the strength of the connection on double-braided nylon hawser was made about 90 per cent as strong as the hawser.

The new fitting on a 100-foot length of two-inch, double-braided nylon hawser was evaluated by Service Squadron Eight, Norfolk Naval Operating Base.

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### **Naval Ordnance Laboratory Designs Dual-Purpose Packaging for Fuzes**

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A molded polystyrene tray for shipment of projectile fuzes has been designed by the Naval Ordnance Laboratory at White Oak, Md. The new container will stand up better during shipment, will be reusable and will require less time to unpack than those now in use. The trays can be employed for bulk pallet loads of fuzes for assembly to projectiles or for repackaging into ammunition boxes for overseas shipment and long-term storage. NOL's dual-purpose design permits the use of one mold for both purposes.

Fiberboard containers which require hand assembly are now used for bulk pallet load shipments. Because of the new model's improved set-up time and other features, costs are expected to be reduced between \$30 to \$35 per pallet load, depending upon the type of fuze being shipped.

NOL's new design was awarded first place in its class at the Western Materials Handling and Packaging Show in Anaheim, Calif. This innovation is ex-

pected to be included in the production fuze contracts during this fiscal year or next.

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### **Lab's Study With Infrared Laser Aimed At Faster Ship-to-Ship Communications**

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An infrared laser which can operate on various wavelengths at the flip of a switch is being developed at San Diego's Naval Electronics Laboratory Center. The lab expects the laser may be used for faster ship-to-ship communications and have civilian applications, too.

By varying magnetic field strength, the laser's output frequency can be tuned.

Although the laser's development is primarily for military purposes, a possible civilian application lies in detecting air pollution. Since certain pollutant molecules absorb infrared light at precise wavelengths, the laser could be tuned to the particular wavelength of a particular pollutant.

The laser beam would be directed to a distant mirror which would reflect the beam back to a detector. When the amount of reflected radiation is measured, the concentration of the pollutant would then be known.

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### **Research Lab's Scientific Spinoffs Benefit Aspects of Civilian Society**

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During its past 50 years of scientific research and development, Naval Research Laboratory has produced spinoffs that have benefited many aspects of civilian society.

For example, long-standing practices for structural design have been completely revolutionized in recent years by new principles for preventing failures due to fracturing brittle metal. Reports indicate that NRL's fracture-safe design is replacing outdated classic methods of fracture control based on stress level limitation.

Another NRL contribution which has proved to be highly beneficial outside the military area is corrosion protection for metals used in a marine environment. The protection system now widely used by U. S. industry has been heavily influenced by NRL-developed standards based on the lab's research.

Metallurgical work done by NRL for the Atomic Energy Commission has also resulted in a direct flow of technology to the civilian economy; research on the sensitivity of steels to high energy neutrons is a case in point. Such research has brought about specifications for improved radiation-resistant steels for future nuclear service.



DCC T. R. Patrick



"Hey, MA!!!"

SN James T. Miller

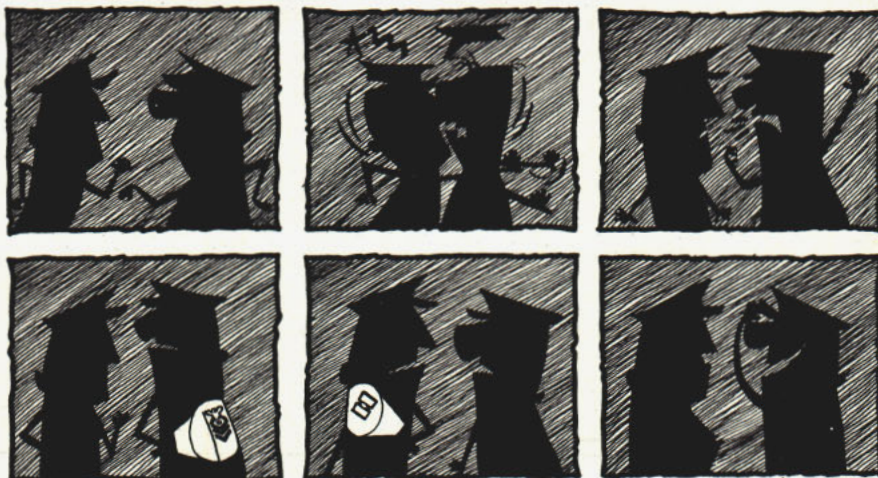


"DECK not DESK!!!"

From the archives of ALL HANDS humor:

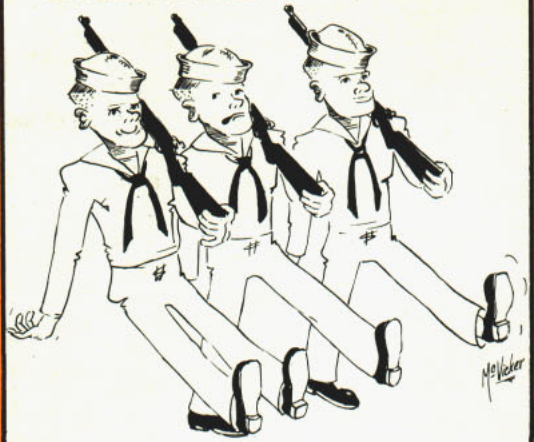
# old jokes you may

AN William R. Hennessy





SK1 Franklin K. McVicker



"Will you stop clowning!"

CTC W. R. Maul



"HA-HA-HA . . . BRAVO! Do you do any others? . . . say Jimmy Stewart? James Cagney?"

EN2 Peter A. Hansen



"What's wrong, Chief!! All I asked was 'What valves do we line up to pipe the admiral aboard?'"

SN H. E. Bradshaw



"Poor form."

HMC Charley Wise



"Yes, sir, the supply officer found me a port fender."

# have missed



Training shutterbugs for 50 years

# NAVY PHOTOGRAPHY SCHOOLS

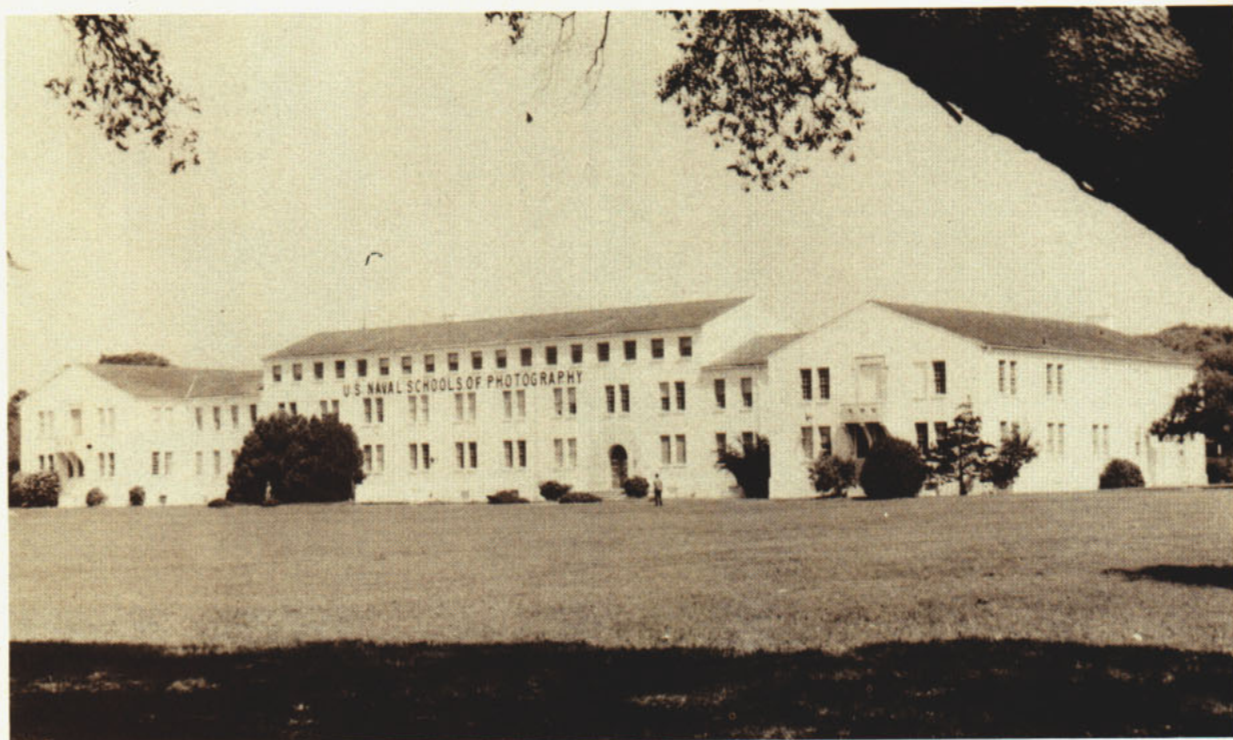
NAS Pensacola



The Class of '26 poses outside building 258, the combined Photo School and Station Photo Lab. Right: Members of a 1936 photo class receive instructions in a RR-5 Ford Tri-Motor Transport. Facing page, top: The headquarters of Naval Photography since 1950. Facing page, bottom: A 1932 class learning portrait taking.







For half a century, young, camera-toting sailors and marines have swarmed over the Pensacola Naval Air Station and surrounding community taking pictures of everything from sunsets to sandfleas. They have been observed lurking in such unlikely places as the insides of trash disposal units, on rooftops, or perched in the tops of trees.

These uniformed shutterbugs, who will seemingly go to any length for the sake of a photograph, are student photographers at the Naval Air Technical Training Unit (NATTU) Schools of Naval Photography.

In August 1973, NAS Pensacola celebrated its 50th anniversary of training Navy and Marine Corps photographers.

Although NAS Pensacola is credited with being the birthplace of naval photography, the Navy's first school was located not at Pensacola, but at NAS Miami. When the Armistice was signed in 1918 the Navy discontinued its school of photography with the mistaken belief that there was no further need for photographic training. With the closing of the photo school, many of the Navy's trained photograph-

ers left the service to continue their photographic careers in civilian life.

By the latter part of 1919 the Navy could no longer satisfy fleet requirements for trained photographers, so in January 1920, the Navy established a second school of naval photography at the Anacostia Naval Air Station, Washington, D. C. Soon afterwards, the rating of photographer was established, thus eliminating the confusion which had previously existed

when men of various ratings were assigned photographic duties.

Shortly after the establishment of the new photographic rating it became apparent that the limited facilities at Anacostia were insufficient to meet growing fleet demands for photographic personnel. Thus, in August 1923, naval photography was moved to NAS Pensacola, Fla.

Facilities at Pensacola in 1923 weren't much better than those at Anacostia. The new school, housed





in building No. 258 along with the station photo lab, consisted of one darkroom which was divided into a series of one-man booths and one lecture room. Classes were set at a maximum of 12 students per class, two classes per year. Thus the Navy was able to maintain an authorized strength (for that period) of 250 photographers.

For the next 10 years, the School of Naval Photography was a well established part of the Pensacola Naval Air Station. Then, in 1934, with the nation in the midst of a depression, the school was forced to close owing to a shortage of money. But the need for photography and trained photographers failed to follow suit. Therefore, with an ever-increasing fleet demand for photographers, the school was reopened in 1935 in building No. 18.

With the outbreak of WWII the school was expanded in both facilities and student complement. In 1943 the school was separated from the station photo lab and became a part of the Naval Air Technical Training Command.

A year later, the Navy moved its Motion Picture and Camera Repair schools from Washington, D. C., to Pensacola. With the transfer of the photo reconnaissance school from Milton, Fla., in 1947, Pensacola became the home of all naval photographic training.

With establishment of an Advanced School of Photography (PH "B") in November 1950, the schools were moved into building No. 1500 where they have remained for the past 23 years.

During the nearly a quarter of a century that the Naval Schools of Photography has been headquartered in building No. 1500, it has undergone numerous curriculum changes. New courses have been added to keep up with the ever-changing photographic technology. New methods of teaching have been introduced, the latest being individualized learning in which the student progresses through the school at his or her own pace. The goal of the school today, as it was in 1923, is to provide the Fleet with the best-trained photographers possible.

—By PHC Art Giberson





All Hands'

# Photography Contest

## CATEGORIES:

A Navy theme: Navy men and women on the job, Navy scenes, or ships and units in action.

Navy life: recreation-liberty-travel.

The Navy family.

## Prizes:

First prize: three-year subscription to ALL HANDS.

Second prize: two-year subscription to ALL HANDS.

Third prize: one-year subscription to ALL HANDS.

Open to all Navy men and women, active or retired, and their dependents.

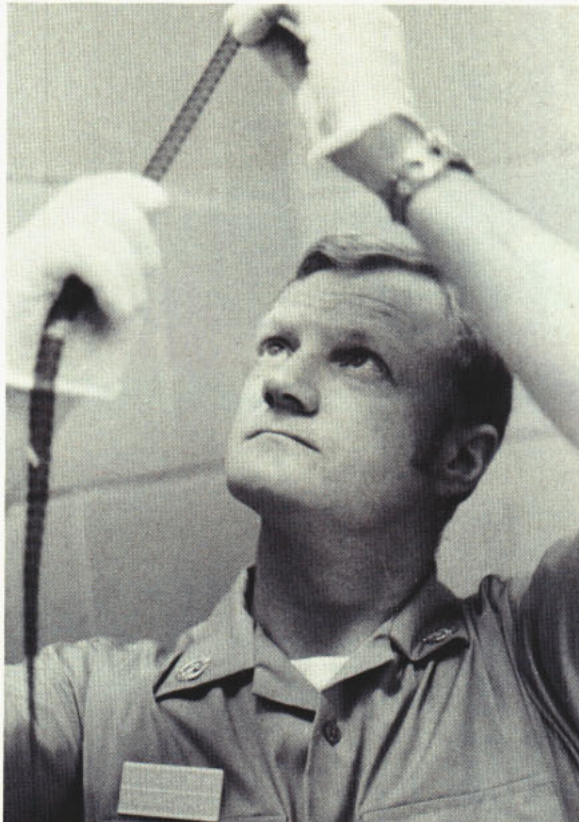
See ALL HANDS, August 1973 for further details.

Facing page, top: A 1932 class is checked out on the 4X5 Graflex camera. Center: Aerial phase students in 1944 receive instruction on the proper use and handling of a parachute and other flight gear before a photo training flight at Chevalier Field. Bottom: Chief Photographer Lyman E. Goodnight, head instructor at the Photography School instructs members of class 1-40 in the operation of the 8X10 view camera. Right: SA Thomas H. Platt (now PHCS) of a 1949 class checks over his 4X5 Speed Graphic press camera.





## **PERSONNEL EXCHANGE PROGRAM**



**Royal Navy  
Photographer  
Brian  
Robertson:**

**FROM  
COSFORD  
TO  
PENSACOLA**



The staff of the Naval Schools of Photography, Naval Air Training Unit, NAS, Pensacola, Fla., has taken on an international look with the recent arrival of British Royal Navy Chief Petty Officer Brian Robertson.

Robertson, a 16-year veteran of naval service, is stationed in Pensacola as part of the Personnel Exchange Program (PEP)—a program in which selected persons of allied Navies exchange tours of duty (See ALL HANDS, May 1973). The purpose of PEP is to provide interesting and challenging foreign duty which will foster a better understanding between allies. The experience and insight gained through working with a military service of another country will hopefully enhance the possibility of further mutual confidence and cooperation.

Chief Robertson will be with the U. S. Navy and Naval Schools of Photography for about 28 months. During that time he says that he plans to see a great deal of the United States.

He reported to Pensacola from RAF Cosford, England, where he was an instructor in the British Armed Forces Joint Schools of Photography. Having been an instructor in the British photo schools for nearly four years, Robertson has an extensive background in teaching; he will be teaching motion picture photography as soon as he completes the Motion Picture "C" School course which he is now undertaking.

"By doing this," he says, "my background in motion picture photography will be reinforced and I can become familiar with the terminology used throughout the course. This," he added, "will make me more effective as an instructor."

This is Chief Robertson's first visit to the United States and he says that this tour may well prove to be the highlight of his naval career. As a married man, he expects his wife and two sons, ages 6 and 9, to join him within several weeks, and foresees no problem in his family's "Americanization."

Since his arrival, Robertson has been doing a great deal of reading about American customs, one of the books being the "Drivers' Handbook for the state of Florida." His cultural adjustments are going to begin as soon as he gets into his car—"Driving on the right side of the road is going to take some getting used to," says Robertson, "but I'm sure I'll get the hang of it."

When asked what three things he most wanted to do while in America, Robertson replied without hesitation that he wanted to go to a drive-in movie, ride a horse with a western saddle, and visit Disney World. With these ambitions, Chief Robertson should have a hardy tour in the United States—and gain a better insight into the development of programs that meet the common needs of the Allies.

—Story and Photos by  
PHC A. C. Clemons



Facing page: Chief Petty Officer Robertson makes adjustments to his 16mm movie camera (top) and examines processed film (below). Above: PH2 Charles Brown and Robertson discuss a photo assignment. Below: In a pre-shooting conference, Robertson and his team members (l to r) PHAN Mark Shaffer, PH2 Charles Brown, and PH3 Barbara Borntrager talk over work they will perform as Motion Picture "C" School students.





- 2ND, 1ST, CHIEF PO CANDIDATES IN PEP ADMINISTRATIVELY ADVANCED

In view of the number of personnel who would require classified material to study for an advancement examination and the inability of these personnel to safeguard such material properly while assigned to exchange duty, the Navy will temporarily administratively advance to 2nd class, 1st class and chief petty officer those candidates who would otherwise be eligible to participate in the normal cycle of examinations for advancement during their Personnel Exchange Program tours.

Temporary administrative advancements will be limited to one per individual, effective in the first increment of the first cycle that the individual would be eligible. Those advanced administratively will have two years after completing the PEP tour to validate their advancements by passing their regular advancement exam.

Master and senior chief candidates who were recommended by their commanding officers and who are -- or will be -- eligible to compete for advancement during the PEP tour will normally take the advancement exams before beginning the tours. If a candidate fails selection, his record will continue to be placed before the succeeding selection boards during his tour. Those unable to take their exams before their PEP tours will take their test while on the PEP tour.

- INITIAL SELECTION TO MASTER-AT-ARMS (MA) RATING

Some 486 Navy enlisted persons of more than 2500 who applied were selected to convert to this new rating. Some vacancies still exist for conversion to the MA rating which will be filled on a case-by-case basis through the normal lateral conversion program. Personnel interested in requesting conversion may apply in accordance with BuPersMan 2230180, as modified by BuPersNote 1440 of 23 Jul 1973 to allow E-7, E-8 and E-9 personnel to apply under the provisions of BuPersMan 2230180.

Those applying must be fully eligible in accordance with BuPersNote 1440 of 4 May 1973.

- NAVCRUITCOM NAMES RECRUITER OF THE YEAR

Operations Specialist 1st Class Wilber G. Richardson has been selected from 10 finalists as the Navy Recruiting Command's Recruiter of the Year. He is attached to Recruiting Area 7 in Dallas, Tex. The other nine finalists included CSC (SS) Joseph Charette, serving with Commander Naval Air Reserve, Glenview, Ill.; BM1 William E. Hazelip, Commander Naval Surface Reserve, Omaha, Neb.; SHC John Polk, Recruiting Area 1, Scotia, N.Y.; MMCS (SS) Raymond B. Hood, Recruiting Area 3, Macon, Ga.; HTC Norman Bolduc, Recruiting Area 4, Columbus, Ohio; SM1 Allen H. Metzger, Recruiting Area 5, Great Lakes, Ill.; BM1 Stanley R. Harrington, Recruiting Area 6, Omaha, Neb.; and IC1 (SS) Vernon L. Armstrong, Recruiting Area 8, San Francisco, Calif. These finalists were selected from 4000 recruiters who tried for the award.

- BOOT CAMP SCHEDULE LENGTHENED TO 9 WEEKS

The Chief of Naval Operations has approved an increase in the length of basic training for Navy recruits from 7 1/2 to 9 weeks so that more time



# briefs navy navy navy navy

can be allotted for more training in military discipline, customs and courtesies. A "fleet orientation" training also will be added to provide recruits with a better idea of what to expect when they leave boot camp. The longer boot camp period will still be followed by "A" schools for those eligible or apprentice training in seaman, fireman, airman or construction-man skills for those not eligible.

- FEMALE MEMBERS "PROOF OF DEPENDENCY" FOR HUSBANDS NO LONGER NEEDED

The Department of Defense has notified all the military services that married female members no longer need to prove dependency of their civilian husbands to draw married basic allowance for quarters or for the husbands to be eligible for dependent medical benefits. This change is retroactive to 14 May 73, when the Supreme Court ruled that certain proof-of-dependency requirements for females -- while not required for males -- were unconstitutional.

- RESERVISTS GET DRILL DAY PX PRIVILEGES

Naval Reservists who are selected Reservists (Drill Pay Status) have been extended unlimited Navy and Post Exchange privileges. This new benefit, approved recently by the Department of Defense, has been extended to these Reservists and Guardsmen during their day of training. In exercising this privilege, Reservists must show their red identification cards and a statement from their unit's commanding officer indicating the day or weekend they are drilling. The exchange privilege for Reservists does not apply to commissaries.

- CHIEF OF NAVAL MATERIAL, NADC WARMINSTER WIN SAFETY AWARDS

The Chief of Naval Material --on behalf of the field activities directly under his command -- and the Naval Air Development Center, Warminster, Md., have been named winners of the 1972 Secretary of the Navy Awards for Achievement in Safety Ashore. First and second runners-up in the major command award category are Commander, Naval Air Reserve, and Commander, Naval Ordnance Systems Command. The Naval Weapons Station, Seal Beach, Calif., and Naval Air Rework Facility, Quonset Point, R. I., are the first and second runners-up in the activity award category.

- MEMORIAL TO USS MACKINAC (AVP 13)

Michigan's Mackinac Island State Park Commission is searching for former crewmembers of the Navy seaplane tender USS Mackinac (AVP 13) who may have documents of historical significance about the ship. The park commission is planning a USS Mackinac Memorial at the Old Mackinac Point Lighthouse on the Straits of Mackinac between Lake Huron and Lake Michigan.

Needed for the memorial are old pictures, press clippings, personal memoirs, letters and other items of display or historic value. Anyone having such items should contact Eugene T. Peterson, Superintendent, Mackinac Island State Park Commission, Stevens T. Mason Building, Lansing, MI. 48926.



## from the desk of the **Master Chief Petty Officer** of the Navy

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### 'Only The Best Survive'

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MCPON JOHN D. WHITTET

Sometime next June, the Chief of Naval Personnel will convene the first annual Navywide chief petty officer selection board here in the Bureau of Naval Personnel.

Much like the senior and master chief petty officer selection board in many respects, the chief petty officer selection board will be composed of

over 40 experienced officers and senior enlisted men from every major skill area in the Navy. Headed by a captain, the board will probably run into July, and report out about the first of August. But not before every page of approximately 20,000 service records has been reviewed.

The basic idea behind the selection board concept is to improve the quality of the CPO community. Candidates should expect some real competition as their service records pass in review before the board. As currently planned, only the top 50% of those who pass the written examination will actually be considered for advancement by the board. As with the senior and master chief petty officer selection board, quotas will be assigned by rating and plans call for both primary and alternate selectees.

The precept for the board has yet to be written.

But it will undoubtedly include a provision to the effect that due consideration will be given to those who have been working "outside" of their rate.

As far as the examination cycle is concerned, the next CPO examination will be held in January 1974 (on or after the 15th of the month) and every year thereafter. However, the eligibility factors for the test, such as time in rate and time in service will remain unchanged.

What will the new selection board be looking for? Basically, the CPO selection board will be looking for the same kinds of things considered by the senior and master chief petty officer selection board. Except that I think we can expect a little more emphasis to be placed on technical skills; because of the fact that the occupational skill level for chief petty officers is more technically oriented than it is for master and senior chief petty officers.

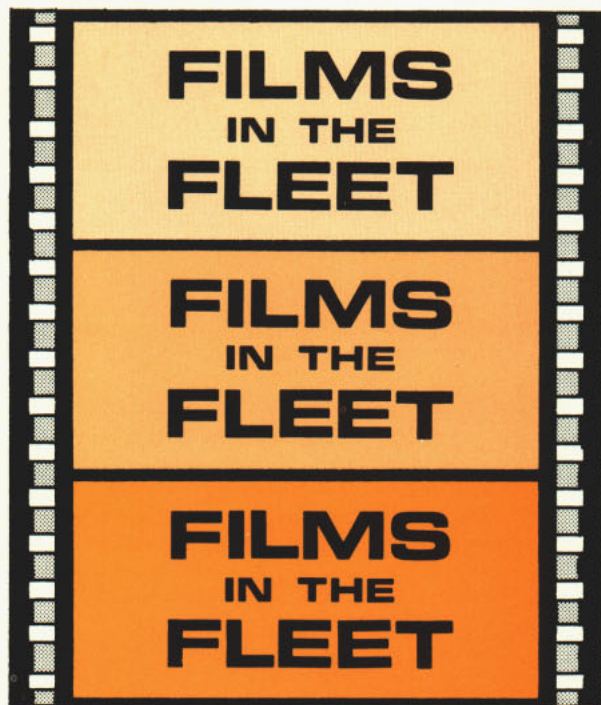
The biggest single variable in the selection process is performance—on-the-job, day-to-day, year-to-year performance. However, the board members will also be looking at each candidate's test score, age, health, awards and decorations, leadership ability, in-service education, off duty education credits, types and places of duty, assignability, administrative ability, discipline record, time in rate, time in service, and over-all potential. The weight assigned to each of these factors may vary from year to year with the needs of the Navy, but these items are all, generally speaking, important areas of consideration.

Inevitably, there will be a few service records with missing data. To cope with this situation a number of additional personnel are being hired to screen each jacket in an attempt to insure that it is up to date. Commands are requested to expedite all requests for information concerning CPO candidates and specifically to insure that E-6 evaluations are submitted in sufficient time to be screened by the board.

The beauty of the selection board concept is that each service record receives a thorough review by experienced personnel with judgment and compassion and who are sworn under oath, without prejudice or partiality, to select only the very best.

The establishment of the CPO selection board represents a giant step in the right direction. While there will likely be a few bugs in the initial board, I am confident that the end results will be superior to our present system of advancing our first class petty officers. It should prove to be a better system for both the Navy and individual Navymen and Navywomen.





The following are synopses of a few films recently made available to the fleet by the Navy Motion Picture Service.

#### UP THE SANDBOX

Life in New York City for a woman with an inattentive husband and two children could be a continual nightmare, but as played by Barbra Streisand (Margaret), it becomes a wacky daydream. Driven to fatigue by her hectic and tiring daily life, Margaret resorts to her exaggerated and humorous fantasies for relief. The clever transitions in this film between the real and the unreal boggle your mind just enough for you to appreciate the confusion in which any housewife might live.

#### THE CANDIDATE

A timely film that features Robert Redford as a young, liberal California lawyer who is persuaded to run for the U. S. Senate. It is a tough, uphill battle trying to unseat the experienced incumbent senator. Director Michael Ritchie (Prime Cut) does a fine job of accurately portraying the rigors of political campaigning. The movie is done in a fast-paced and spontaneous documentary style, and shot entirely on location throughout California. The screenplay by Jeremy Lerner won an Academy Award.

#### AVANTI

Billy Wilder directed this romantic comedy about an American businessman (Jack Lemmon) who travels to Italy to return the body of his father who was killed in an auto accident. He discovers that his supposedly convalescing dad died with a lady in the car and was quite a swinger besides. Lemmon then becomes entangled with the woman's daughter (Juliet Mills) who

journeys from England because of her mother's death. After a series of comic antics in and around a Mediterranean resort hotel, the pair follow their parents' footsteps and fall in love.

#### THE EFFECT OF GAMMA RAYS ON MAN IN THE MOON MARIGOLDS

Too much radiation from gamma rays may destroy marigolds, while a small amount may produce the most beautiful mutants. This is the result of a small girl's biology experiment in school—but it is also a metaphor for her life in a small rural town in Connecticut. Paul Newman directs his wife, Joanne Woodward, who plays the widowed, self-indulgent mother of two helpless children who have the misfortune of being her daughters. In keeping with the cluttered backyard or the dump house in which she lives, the mother has made a mess of her life and tries to run the lives of her offspring. One daughter resorts to the same selfish games that are played by her mother. The other child (in real life the daughter of Newman and Woodward) immerses herself in her biology experiments, winning first place in the science fair, and freeing herself from the tyranny of her mother.

#### STEELYARD BLUES

Donald Sutherland and Peter Boyle play two brothers who are social castoffs. Their troublesome behavior is a thorn in the side of their politically ambitious brother who must continually bail them out to keep the family record clean. On the surface, the two are sympathetically depicted as harmless social misfits. But when nonconformism is put in the hands of two comedians like Donald Sutherland and Peter Boyle, the social message becomes secondary to their antics. Their lives may be a continuing struggle against a society in which they feel trapped—but they are also a never-ending joke at which the two never stop laughing.

Other films that have also been made available are listed below. All movies are in color unless designated by (B&W). Those in wide screen are designated by (WS).

*The Train Robbers* (WS): Western; John Wayne, Ann-Margret.

*Bluebeard*: Comedy drama; Richard Burton, Raquel Welch.

*Dracula A.D. 72*: Horror; Peter Cushing, Stephanie Beacham.

*The Red Mantle* (WS): Drama; Gitta Haenning, Oleg Vidov.

*The Creeping Flesh*: Horror; Christopher Lee, Peter Cushing.

*Hammersmith Is Out*: Drama; Richard Burton, Elizabeth Taylor.

*Shamus*: Action drama; Burt Reynolds, Dyan Cannon.

*The Godson*: Action drama; Alain Delon, Nathalie Delon.

*The Life & Times of Judge Roy Bean*: Western drama; Paul Newman, Anthony Perkins.



# A Report on

# Credit Union\$

Of the people, by the people and for the people, not only applies to our Constitutional government, it is also the way Navy credit unions are run. They operate on a nonprofit basis to promote habits of thrift through the accumulation of savings; to provide loans at reasonable interest rates; and to extend financial counseling services on personal and family financial planning problems.

Although the first U. S. credit union opened its doors in 1908, under a state charter, it wasn't until 26 June 1934 that Congress provided Federal charters by passing the Federal Credit Union Act. The Act made credit more readily available to people of small means through a national system of cooperative credit. Today, there are more than 12,700 federally chartered credit unions under the supervision of the National Credit Union Administration (NCUA). In addition,

more than 10,000 U. S. credit unions are state chartered and are normally regulated by the banking commissioners in the state in which they are located. Of all federally and state chartered credit unions, about 100 serve predominately Department of the Navy personnel.

A credit union comes into existence because people at a naval installation who have a common bond want it to exist. There are many sound reasons which move people to take the trouble to start such an institution.

This country's most prominent credit union pioneer was Edward A. Filene, a Boston merchant who gave of his time and more than a million dollars to the cause of organizing credit unions. The credit unions which now serve Navy and Marine Corps personnel owe their existence to Mr. Filene and other credit union pioneers who were dedicated to helping other people gain financial security.

In Filene's day, commercial banks were not interested in making consumer loans. He recognized that people of small means were being driven into the arms of moneylenders who charged usurious rates of interest which frequently kept the borrowers entangled in a web of debt for much of their lives. He was interested in the establishment of a nonprofit organization which would lend money to specific groups of people at reasonable rates, hence the credit union.

There are some differences between a credit union chartered by the state and one which operates under federal regulations. One major difference is that federal credit unions are restricted to making loans with maturities of no longer than 10 years, while state credit unions are authorized to make loans for much longer periods which puts them in the mortgage loan business.

A board of directors of each credit union establishes the maximum amount a member may borrow. Many Navy-sponsored credit unions authorize loans up to \$15,000 plus any additional amount fully covered by shares. Federal credit unions charge a maximum Annual Percentage Rate of 12 per cent on loans and pay a maximum dividend of six per cent on share accounts. Funds which are not loaned to members may be invested only in U. S. government obligations, shares in insured savings and loan associations, loans to other credit unions, obligations issued by any wholly-owned government corporation or obligations fully guaranteed by the U. S. government.

The share accounts of federal credit unions are cov-



ered by deposit insurance up to \$20,000 provided by the National Credit Union Administration (NCUA). State credit unions are also eligible for federal insurance provided they meet certain standards established by NCUA.

As members of Navy credit unions know, they are entitled to participate in the election of the credit union officials. Unlike shareholders in corporations, the credit union member who owns one share is entitled to one vote, the same as the member who has several thousand shares in the credit union. Inasmuch as a credit union is a nonprofit organization, all earnings in excess of operating expenses and required reserves are returned to members in the form of dividends or used for their direct benefit.

It might surprise some to know that each Navy credit union is independent of all other credit unions. There is no connection between the credit union which operates at Great Lakes, for example, and that which operates in Pensacola. Some have branches which operate near Navy offices scattered throughout the urban and suburban areas and even at distant locations.

It is impossible to make statements which apply to all Navy credit unions when speaking of dividends. Inasmuch as the Navy Federal Credit Union at Washington, D. C., is the largest federal credit union in the country (more than 250,000 members with over \$325 million in assets), it is used here as an example. Dividend rates of other Navy credit unions can be expected to be more or less the same.

NFCU, based in Washington, pays dividends semi-annually out of its earnings. A shareholder earns dividends in proportion to the number of five-dollar shares he holds. Shares purchased by the 10th of the month earn dividends from the first. In order to attract sufficient capital to meet the loan demand of its members, NFCU must pay a dividend which is competitive with other savings institutions. Its board of directors declared a dividend of 5.85 per cent per annum for the first half of 1973.

Dividends are posted to members' accounts on the first of January and July for the periods ending on 31 December and 30 June. Shares withdrawn before the end of these periods accrue no dividends. Shares can, however, be transferred from one share account to another with no loss of dividends.

NFCU, like many other credit unions, also has an added benefit to attract shareholders. For every dollar deposited (up to \$2000) it gives a dollar's

worth of life insurance to all its shareholders between the ages of six months and 66 years who are able to perform the usual duties of their occupation.

This insurance, in effect, increases the shareholder's net worth. The value of the insurance, of course, increases as the shareholder gets older. At age 25, for example, \$2000 worth of commercial term insurance would cost about \$8.06 per year. At age 45, the same coverage would cost about \$20.48 per year. Although insurance isn't offered to members who are 66 and older, coverage extended to a member before he becomes 66 remains in force regardless of his age unless he withdraws the shares on which it is based.

One of the big advantages of having a membership in the Navy Federal Credit Union is the ability to make a loan at a low rate of interest. Although the availability of consumer loans from commercial banks at comparable interest rates is now fairly common for persons with established credit, Navy men could easily find themselves in the position of not being able to obtain a loan at reasonable rates.

Inasmuch as Navy families are mobile, they are frequently stationed away from localities where they have established credit. A Navyman recently transferred from the Washington, D. C., area, for example, to Pearl Harbor might find it difficult to borrow enough money to buy a car, furniture or other items which require cash outlays normally exceeding his monthly income. If he is a credit union member, however, obtaining a loan for a reasonable purpose can be relatively simple. If he is a member of NFCU Washington, there are a number of places throughout the world where he can withdraw shares or apply for a loan by telephone or visiting a nearby office.

Navy Federal Credit Union shareholders can obtain loans for what the Federal Credit Union Act calls "provident and/or productive purposes." These include tuition, home improvements, purchase of businesses and real estate, investments, tax payments, medical, dental, hospital and funeral expenses, consolidation of debts and the purchase of durable goods such as automobiles, boats, mobile homes, refrigerators, stoves, washing machines, television sets and furniture.

Again it is impossible to make a statement which covers all Navy credit unions. However, NFCU Washington is an example in which a pattern of other Navy credit unions can be seen.

In Washington, NFCU members can apply for a loan by visiting any one of eight branches or by call-



ing 889-3950. If the borrower is not in Washington, he may apply for a loan by using NFCU's toll free telephone loan service; visiting or telephoning any of the offices or loan and share withdrawal facilities; by mailing NFCU a completed loan application; or by cable/wire at his own expense.

NFCU members can borrow as much as \$2500 on their signature alone. Such a loan requires no collateral. The annual percentage rate on signature loans from NFCU is 10.5 per cent.

In many cases, credit unions, like other financial institutions, will provide a more favorable rate of interest on loans which are secured by collateral. In fact the collateral offered frequently influences the interest rate charged. For example, NFCU Washington will lend its members money to buy a new car at an annual percentage rate of 8.4 per cent and will also offer this same rate if the member has sufficient shares on deposit which he pledges as security for the loan. Other secured loans may be obtained at a 9.6 per cent annual percentage rate. As mentioned before, there is a limit of \$15,000 plus an additional amount fully secured by shares on all such loans.

It might be noted that these rates are not the maximum which are authorized for federal credit unions by the Federal Credit Union Act. That amount is one per cent per month on the unpaid balance or the equivalent of a 12 per cent annual percentage rate. This ceiling includes all charges incident to making a loan.

A large portion of the loans made by Navy credit unions is for the purchase of automobiles. It is the policy of NFCU Washington to lend up to 75 per cent of the manufacturer's list price on a new car or up to 75 per cent of the average current retail value of a used car. The same percentage can also be loaned on campers, mobile homes, motor homes and travel trailers. If the borrower's financial situation warrants, NFCU will lend him an additional amount on his signature.

Terms for repayment of loans are generous. Car payments, for example, can be prolonged for 36 months, while up to 120 months may be authorized for repayment of loans on boats, airplanes, mobile homes and home improvements. Up to 120 months can also be allowed on tuition loans and loans for the purchase of real estate and loans fully secured by NFCU shares.

It might also be well to mention here that NFCU Washington provides complimentary credit life insurance on all loans up to \$10,000. If the borrower dies before the loan is repaid, and the outstanding balance is \$10,000 or less, no claim is made against his estate.

As mentioned earlier, one of the functions of a Navy credit union is to provide financial counseling. At NFCU Washington, advice can take various forms. Sometimes it is unasked for as in the case of the man who wants to buy a very expensive car and asks the credit union for a loan. After considering the pertinent facts, the credit committee finds the man is obviously financially incapable of swinging the deal, the loan is disapproved with the suggestion as to what the applicant's circumstances might allow.

The loan officers and financial counselors at NFCU take their responsibilities seriously as the office procedure at NFCU Washington indicates. It takes only one loan officer to approve a loan but it takes the three-member credit committee to refuse one. Even after a loan is refused by the credit committee, its decision can be appealed. In a one-month period at NFCU Washington, there were 15,341 loan applications and only 746 disapproved.

Financial counseling also has its more complex sides. Sometimes the commanding officer of a naval installation will send a member to the credit union suggesting that he obtain financial counseling and straighten out his debts. Otherwise, he may not be eligible for reenlistment.

It isn't difficult in these days of easy credit for a

### Field of Membership

It is important to remember that there are approximately 100 state or federally chartered credit unions serving Department of the Navy personnel. One additional important feature unique to credit unions is known as the "field of membership."

Credit unions are formed to serve a specific group; the "field membership" is that portion of a credit union's charter which lists the individuals or groups it may serve. Therefore, to be eligible for benefits or services provided by a credit union, an individual must be within the credit union's field of membership.



young Navy family to open revolving charge accounts at several stores. Before they know it, the payments have gotten out of hand and they find themselves paying exorbitant carrying charges. Sometimes time payments take most of the monthly paycheck.

Members who find themselves in such a situation are welcome to consult the Navy Federal Credit Union which will lend its expertise toward making them solvent again. Usually, the first thing the advisors recommend is that all credit cards be destroyed. The financial advisors then make an inventory of all debts and contact the member's creditors to work out the best possible deal to assist the member in paying off his debts. Sometimes a creditor will renounce his entitlement to interest due in the expectation of recouping the unpaid balance on the principal still owed.

The credit union's financial advisors then consider the debtor's income and what he will need to live on while he is getting out of debt, then take action. In some cases the credit union will advance money in the form of a loan to pay the man's consolidated debts. This eliminates the higher interest rates demanded by revolving charge accounts in favor of the credit union's lower loan interest rates, and permits the member to make one loan payment per month in lieu of several. A loan company (not a commercial bank) would charge between 15 and 36 per cent interest per annum for such a loan. No federal credit union serving Navy personnel charges an annual percentage rate of more than 12 per cent and many charge less.

As the result of an extensive effort by the Bureau of Naval Personnel, all members of the naval service should now be eligible for membership in some existing Navy credit union. *Generally speaking, you will be eligible for membership in a credit union in your local area.* If, however, you have been denied membership in a credit union and cannot find one that will serve you, contact BuPers for assistance by calling A/C 202-0X4-1225/AUTOVON 224-1225 or by writing to the Chief of Naval Personnel (Pers-7312), Navy Department, Washington, D. C. 20370. Be sure to indicate your duty station in any correspondence with BuPers.

Naturally, it takes considerable discipline for a man literally to be taken into receivership so the credit union can help him get out of debt. The credit union can't do it all; the debtor must accept the NFCU advisor's counsel before anything can be accomplished. Many fail to do this, dropping out before they reach their debt-free goal.

NFCU Washington, however, points with satisfaction to help it gave one of its members who, in 1967, was \$37,000 in debt. This year his debt was entirely liquidated thanks to the member's determination and the support given by the credit union. The average indebtedness of those seeking counsel lies between seven and nine thousand dollars.

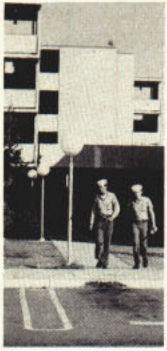
Navy credit unions have a remarkable record for stability. Whenever one goes out of business, it is usually because of a base closure or perhaps a small credit union finds it cannot provide necessary services and merges with a larger credit union. In either case, shareholders will receive their shares in full and quite often a liquidating dividend.

The books of federal credit unions are examined each year by examiners from the National Credit Union Administration. Following the examination, the board of directors of the credit union is provided a written report which notes any irregularities in operations and provides suggestions for improvement. In addition, the Supervisory Committee of credit unions conducts periodic internal audits of member accounts, and in the case of NFCU Washington, the committee has engaged a nationally known firm of certified public accountants to conduct the audits.

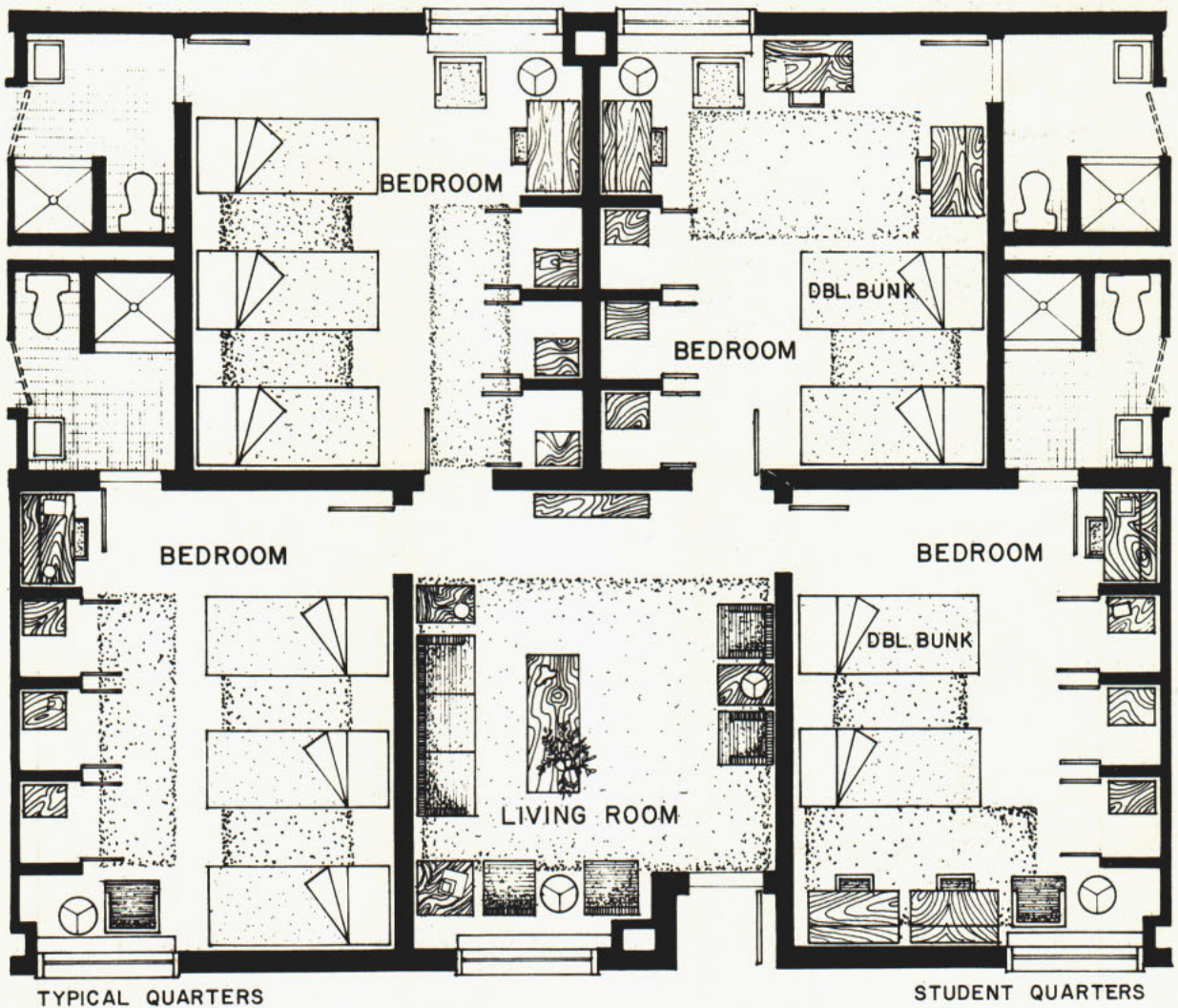
NFCU Washington also carries a \$5 million surety bond which provides indemnity against direct losses through burglary, robbery, larceny, theft, forgery and other forms of dishonesty. All credit unions are required to carry surety bond coverage appropriate for the needs of the credit union.

Every feasible precaution, has been taken to shield credit union shareholders against the loss of their hard-earned savings and the credit union makes every effort to fulfill the reasons for its existence. If you are a shareholder, all the credit union does is, in a sense, help you to help yourself. A credit union, after all, is a group of people who create a source of low cost credit for themselves and their families by saving collectively and systematically. As a shareholder, you are one of that group. The credit union belongs to you.





# From open bays to private baths



TYPICAL 12 MAN MODULE

NAVY BEQ



Old-style open dormitory barracks with large central bath facilities may soon be a thing of the past for enlisted men of the U. S. Navy and Marine Corps—if the example of the Naval Air Station, Corpus Christi, Tex., is followed. Earlier this year, 552 Navy enlisted men moved into modern apartment-style quarters in the first of a new series of many such quarters designed by the Naval Facilities Engineering Command.

Greater privacy and a homelike atmosphere are the goals of the new designs. The opening of the new barracks at Corpus Christi is the result of efforts begun in 1967 by the Navy to improve quarters for single people. The design has proven so popular that similar designs are now being used by other military services.

The first departure from the old dormitory-style barracks actually took place in 1968 when the Bethesda and Ream Field barracks were opened. The Bethesda Naval barracks featured six bedrooms surrounding a central core which contained bath, laundry and living room facilities. The Ream Field barracks employed a central core, which contained bath and laundry facilities, with 16 exterior bedrooms and a lounge.

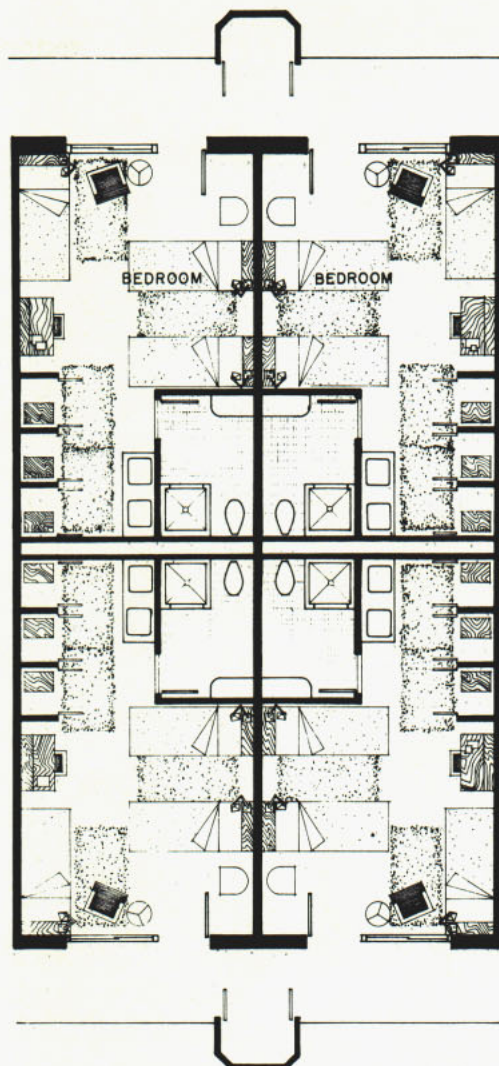
These two plans were repeated at a number of locations. The first thought in building others was merely to translate these plans to a Navy standard design. With the approval of more liberal space allowances, however, a new modular plan was developed.

This new design has four three-man bedrooms surrounding a living room. Off each bedroom is a private three-fixture bath just like in a house. The square footage allowance for housing bachelor enlisted personnel was a prime consideration, so each bedroom is suitable for three E-2s to E-4s, two E5s to E-6s, or one E-7 to E-9.

The rooms are so configured that all four bedrooms of one module have walls common with bedrooms in an adjacent module. This permits adjoining emergency firedoors between two groups of bathrooms so that escape from a back bedroom could be made through an adjacent module in case there is a fire in one's own living room. Each apartment has a private entrance off a covered exterior walkway.

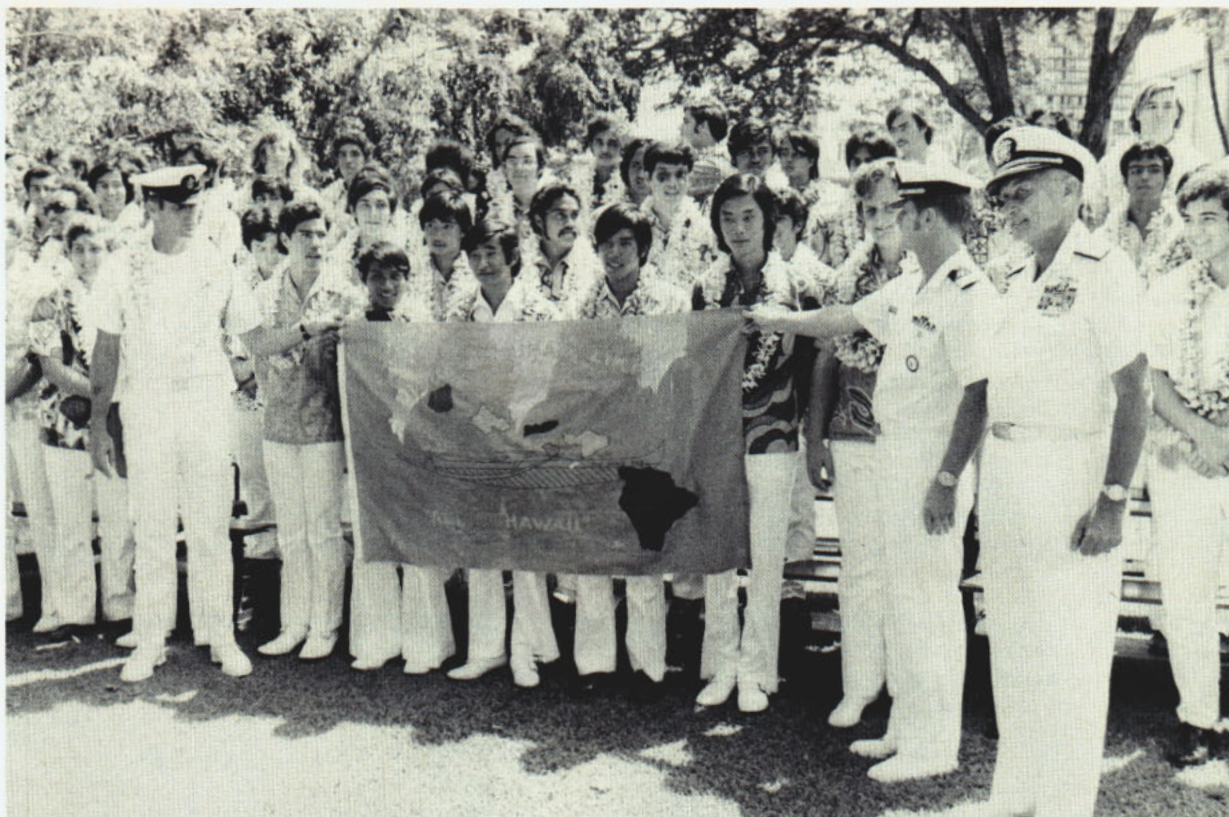
In addition, architects of the engineering command are preparing a design for Marine bachelor enlisted quarters. This design calls for standard size buildings of masonry construction with three-man bedrooms and a central service area in each building. There will be a private bath for each bedroom, and the service area will have a lounge, laundry, storage rooms, vending machines, telephone and mail box on each floor, plus an office on the first floor. The new design will first be used for construction of a 576-man barracks in Parris Island, S. C.

Both the Navy and Marine Corps multi-use designs will be adapted to the locality in which each is built, and each design is complete with interior designs for pleasant, comfortable living. Last year, in addition to the 552-man BEQ at Corpus Christi, the engineering command started construction for 12,278 Navy-men. This year construction has been proposed for BEQs for 8439 men and in 1974 for 5150 men.



TYPICAL 12 MAN MODULE  
( SAMPLE FURNITURE ARRANGEMENT )  
MARINE BEQ





## ALL-HAWAII RECRUIT COMPANY

# ALOHA AHOY

When 70 young men from Hawaii were given the oath of enlistment this summer by Admiral Bernard A. Clarey, Commander in Chief, U. S. Pacific Fleet, it turned out to be a landmark event in more ways than one.

The formation of the Navy's first All-Hawaii recruit company also marked the passing of the draft in the U. S. The company was also the first all-state group ever to be comprised entirely of high school graduates who have earned assignment to Navy specialized schools upon completion of recruit training.

The ceremonies on the grounds of the Iolani Palace, Honolulu, were a colorful combination of naval and Hawaiian tradition. VIPs of the State of Hawaii and local Navy commands were in attendance. The over 500 family members and well-wishers of the recruit company were entertained during the ceremonies by famed Hawaiian singer, Miss Emma Veary, and also by the CinCPacFlt Band.

Hawaii Governor John A. Burns proclaimed Saturday "a day of appreciation for all Hawaii's sons and daughters who have answered the Navy's call to see the world and serve the cause of freedom gallantly and well in war and peace."

Following the ceremonies, families and friends gave the new recruits a grand Aloha send-off at the Honolulu International Airport when the All-Hawaii Recruit Company boarded a plane for San Diego to begin seven weeks of boot camp.

The company took with them to San Diego their own flag which depicts a brown and white outrigger canoe and an outline of the Hawaiian Islands on a field of blue. In addition, they have their own motto, "Imua, A Kupaa Like" (Forward Steadfastly Together), which is also inscribed on the flag.

And to provide a finishing touch, the new recruits' company commander will also be from Hawaii, Chief Machinist's Mate Dale Scott from Lanai City.





Facing page: The All-Hawaii Recruit Company displays the company flag in ceremonies at the Iolani Palace. Left: ADM Bernard A. Clarey, Commander in Chief U. S. Pacific Fleet, administers the "oath of enlistment." Below: Noted island personalities attended the festivities. From left to right are Mayor Frank Fasi of Honolulu, Lt. Gov. George Ariyoshi, Hawaiian songstress Emma Veary, and ADM Clarey. Bottom left: ADM Clarey exchanges greetings with members of the company. Bottom right: MMC Dale V. Scott, who will be the group's company commander at boot camp in San Diego, watches over his "new company."





# "KOA IKAIKA"

## marine maneuvers on molokai

This story is about the 1st Marine Brigade. Although ALL HANDS is mostly "sailor" oriented, we think the photo story will be of interest to the Navy community in general to let them see something of Marine activities. The article and photos are by Photographer's Mate 1st Class Carl R. Begy, USN.

"Let him who desires peace prepare for war."—Vegetius, A.D. 375

Small beads of sweat, tinted by the powdery red dust swept from the barren earth that stretched for miles, formed pink droplets on the forehead of the Marine's sun-burned face. His gaze fell upon a landscape relieved only by patchy yellow scrub grass and scattered, gnarled wind-stripped trees.

The place is Molokai, central island in the Hawaiian chain and a perfect setting for the recent exercise "Koa Ikaika."

Koa Ikaika (Operation Brave Soldier) was a training exercise involving the 1st and 2nd battalions of the 3d Marine Regiment, 1st Marine Brigade, stationed at Kaneohe, Hawaii.

The mission of the Brigade was simple — destroy the aggressor forces (they happened to be made











Marines ready themselves and their weapons to begin their sweep of the countryside during "Operation Brave Soldier," an exercise of the 3rd Marine Regiment, 1st Marine Brigade, Marine Corps Air Station, Kaneohe, Hawaii, near Pearl Harbor.





up of Marines from Amtrac and Communication units also stationed at Kaneohe).

Koa Ikaika gave the Marines a chance to improve training and assault techniques, evaluate the unit's operational readiness, and conduct staff exercises on the regimental and battalion level.

For more than 48 hours aggressor forces used ambushes and guerrilla techniques to try to inflict mock casualties on the Third MarDiv before the aggressor was finally cornered on a rocky hill and overrun.

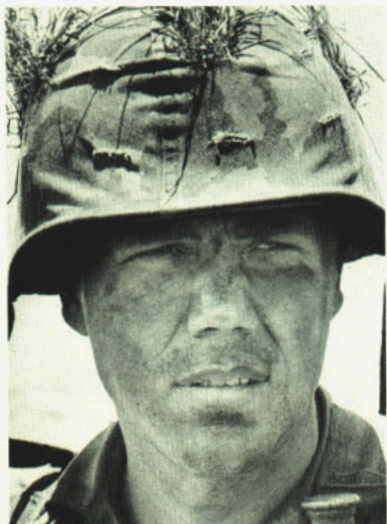
As it turned out, it was not easy going by any means. The men had not only to contend with the aggressor, but an even harsher enemy—the elements!

The scorching, white-hot Hawaiian sun drained the men's strength while the rocky terrain, steep hills and gullies added to the burdens of their packs and weapons.

But "Brave Soldier" accomplished more than raising blisters on the feet of the more than 900 Marines who sweated through the grueling days in the field. It renewed self-confidence and sharpened skills.

In praising his Marines' performance, Colonel James P. Connolly, II, commanding officer of the 1st Marine Brigade elements, called Koa Ikaika an "outstanding success."

PH1 Carl R. Begy, USN





# SEA, SAND



Some like it hot. Take the guys on *uss LaSalle* (AGF 3), for instance. Since May was "firefighting month," they decided to hold a school for some of the crewmembers—only they held it in the middle of a desert, near Bahrain Island in the Arabian Gulf, where the ship is homeported.

The firefighting school was to be 9000 miles away from the nearest naval training activity, so some special arrangements had to be made. An agreement was worked out with a local petroleum company to use the firefighting field at its nearby refinery, and before long busloads of sailors were deployed across the desert with hoses, applicators, and other standard pieces of firefighting equipment.

Fighting gasoline fires under the hot Middle Eastern sun is no easy task, but by the time the classes were over, everyone had a pretty good idea how to tackle the problem. Carbon dioxide bottles and PKP extinguishers were tried out on oil spill fires. High velocity and low velocity hoses were used on several gasoline tank fires and a water-motor proportioner was used to put a layer of finished foam on a class B fire in a large circular tank.

*La Salle*, a former amphibious force flagship (LPD 3), was converted to a general purpose flagship in January and has been homeported in Bahrain since





# AND FIRE

August 1972 as flagship for Commander, Middle East Force. U. S. Navy ships have been operating in the Gulf and Indian Ocean area since January 1949, when the Middle East Force was established. During the time there, these forces have worked to maintain close relationships with both industries and governments of the area.

In 1972 U. S. sailors joined the oil company's employes for four days in fighting a blaze that broke out in some of the refinery's storage tanks, causing millions of dollars of damage and momentarily upsetting shipping schedules. Several months later, the Middle East Force was involved in yet another firefighting incident when sailors from *uss Charles R. Ware* (DD 865) rescued 32 South Koreans from their blazing super-tanker in the Gulf and fought a raging fire for several hours on board another tanker.

*La Salle's* firefighting program is part of a growing pattern of coordination and cooperation between Navy units and private concerns. As the Navy's overseas homeporting continues in the years ahead, the sight of Navy sailors fighting oil fires on a desert training field will probably become commonplace for the nearby herds of camels.

—Story by ENS H. Conway Zeigler  
Photos by EM3 Bruce Bohnsack





# USS Westchester ©.



"We're getting more work out of fewer men than I ever thought would be possible," said Boatswain's Mate 1st Class Henry W. Welsh, III, leading petty officer of the second division aboard *uss Westchester County* (LST 1167).

Welsh, a 10-year Navy veteran with more than three years aboard *Westchester County*, was speaking of the tempo at which he and his men had been working during the minesweeping operations in North Vietnamese waters.

The 384-foot LST was assigned to "End Sweep" as a mother ship to the 10 ocean minesweepers (MSOs) which have at various times been a part of Task Force 78. In more common terms, she is acting as the support ship for the minesweepers which are working in the area.

The primary wartime mission of *Westchester County* and other LSTs is to land vehicles and equipment on enemy shores—often in the face of heavy resistance. Ships of this class are also used for emergency casualty evacuation and the transportation of high explosives or large quantities of fuel.

However, on "End Sweep," *Westchester County's* biggest and most important job was carrying the vital surface mine countermeasures (SMCM) equipment needed by the wooden-hulled minesweepers which do not have the necessary storage space to be self-sustaining.

"It is sort of like being a full-service bank," commented Chief Warrant Officer Don V. Patino, who is the staff logistics and supply officer of the embarked Mine Flotilla One Staff.



As Chief Boatswain's Mate Joe Taylor, head of *Westchester County's* 44-man deck division, put it, "We've done everything this ship can do on this operation. We've hauled freight, refueled the MSOs, replenished their stores, and even provided a sort of at-sea liberty port for the minesweeper crews."

During the minesweeping operations, the Yokosuka-based LST provided "one-stop" shopping, laundry, postal, medical, disbursing and personnel services to the crews of the 10 "sweepers" which came alongside. And they came alongside at the rate of at least one a day. "We've had as many as five of the minesweepers alongside in one day," said Chief Warrant Patino.

According to another, the largest single item carried by *Westchester County* for the minesweepers were the huge cable reels which hold the heavy magnetic minesweeping tails—called "magtails"—used by the ships to sweep magnetic mines. The magtails put out a magnetic field of about 6000 amps, covering a sweep path of about 600 feet.

"Due to heavy use," said Chief F. A. Smith, "we had to change the magtails of several MSOs while we were out there."

"The original estimate for a magtail transfer," added Petty Officer Welsh, "was 16 hours, but we did it in a little over two hours."

"We also stored their magnetic offload," said Chief Boatswain's Mate Smith, who is part of the Mine Flotilla One Staff. "This included a lot of personal

items," he continued, "such as radios, electric shavers, and tape players—anything magnetic—which the minesweepers couldn't take into the mine fields."

Lieutenant Commander Richard Holly, commanding officer of *Westchester County*, smiled proudly when asked about the men of his ship and said, "Those guys were really thrown out there, and they came through!"

Commander Holly recalled with amusement his reaction to *Westchester County's* assignment to "End Sweep." "I wasn't at all familiar with mine warfare and countermeasures," he grinned, "and when we received orders to be part of an MCM task force, I had to ask my executive officer what the MCM operations were. We found out!"

—Story and photos by JOC John J. Gravatt



Crewmen of USS *Westchester County* prepare to hoist a mine-sweeping magtail reel to the ship's main deck for transfer to one of Task Force 78's ten ocean minesweepers.





# A SAMPLING: THE EVOLUTION OF NAUTICAL TERMS WAY BACK WHEN

What's in a name? "Bill" Shakespeare once wrote that "a rose by any other name would smell as sweet." Maybe so, but what about names like scuttlebutt, admiral, forecaskle and mate? By any other name they might be the same, but their histories wouldn't be nearly as interesting.

Some of the most durable expressions in the English language are sea terms. There may be a number of reasons for this. One is certainly that sea expressions are colorful and different—they're easy to say, and they may give a whole new slant on the meaning. Another may be that life at sea—and consequently the language—is less subject to change and is more isolated

than life on the land. Consequently, terms like smoking lamp and doghouse (originally a nautical term) stay around for a long time.

Then there's the fact that seamen visit so many different places and are liable to pick up expressions from all over the world. In this sense they are making great contributions to the English language.

One of the most enduring sea expressions is scuttlebutt. Today we think of scuttlebutt as rumor or idle chatter—like the ship's going to deploy on a secret six-month operation in two days. A couple of hundred years ago, however, sailing vessels carried large casks which were filled with fresh water

for drinking at the beginning of each voyage and at places where fresh water could be picked up.

This fresh water, by the way, was often more precious than the sailor's grog—also another naval term. The smaller casks that carried the water were known as "butts." The water was drawn from the casks with a spigot which was placed in a "scuttle" (the Anglo-Saxon word for hole). Scuttlebutt meant water cask or, later, water fountain, and since this was the place where men gathered and talked, the term was used for this conversation.

"Dog watch" derived its name somewhat differently. This term refers to two watches of two hours each, one from 1600 to 1800 and the other from 1800 to 2000. These watches were introduced many years ago to keep the same men from standing the same watches every day. Thus, the first and second dog watches, being stood by different people, split up the usual four-hour watch, and the duty hours for the entire watch were automatically shifted.

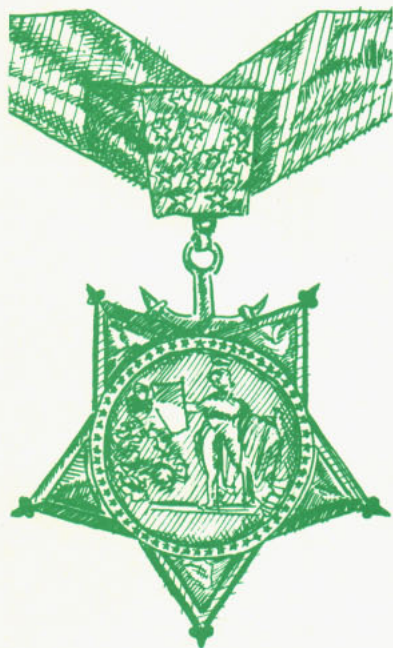
The term derived from this practice of "dodging the watch," or standing the "dodge watch." As you can imagine, it was easily corrupted into "dog watch," and has remained such ever since.

**Left:** In the days of wooden ships the men actually used a smoking lamp to light up. The phrase has stuck to this day.





Smoking lamp is a term not disseminated among the civilian community, but it still is used extensively in the Navy. It also had an early beginning in the days before sailors would carry cigarette lighters. They were not allowed to



strike matches because of their danger on wooden ships. Lamps from which a man could get a light were hung in the fo'c'sle and other convenient places on board ship. Smoking was restricted to certain times of the day, and during those times the officers would order "the smoking lamp lit" and later "the smoking lamp out." Today there are no smoking lamps, but still "the smoking lamp is out" during times like drills, refueling or taking on ammunition.

Fo'c'sle (pronounced "foksul") is another term known to most sailors and having a long evolution. It is properly spelled forecandle, but even that is a contraction of the two-word term "forward candle."

It all started sometime in the 13th and 14th centuries when huge wooden castles used to fight from were placed fore and aft on Hanseatic ships. Similar in shape to the towers used by feudal lords to defend their castles, these soon became known as both the forecandle and aftercandle.

In the days of Columbus, ships continued to be fitted with these structures, with the crew living in the forecandle and the officers quartered in the aftercandle. Though the word aftercandle has disappeared from use, the forecandle has survived. Today it refers to the same general part of the ship as the original "forward candle" and in merchant vessels it is the forward part of the ship where the seamen today live either below the main deck or in a compartment above the deck.

Another naval term with a surprising and interesting history is "son of a gun." It's used as an assorted form of address in civilian life, but it began at sea. In the enlightened 18th century British Navy, sailors in certain rates (usually gunner's mate and quartermaster) were allowed to take their wives on board ship with them. Son of a gun was the term used to refer to children of the tars and their mates, often born alongside the guns—which were often fired by order of the captain to help a woman in labor. As you can imagine, there were a lot of children born a little early during battles.

Ranks and titles provide us with some more interesting history. For instance, admiral—which stems from the Arabic phrase "Amir-al-Bahr" meaning "Commander of the Seas"—wasn't given to anyone in the United States Navy until just over a hundred years ago. And it didn't become an official rank until 1862 (Rear Admiral). The early Congresses felt that the title of admiral was too reminiscent of monarchy and aristocracy. Christopher Columbus was entitled "Admiral of the Ocean Seas" and his direct descendant in Spain still carries that

title. But for Americans the title of the senior officer of the Navy—named by Congress in 1775—was the commander in chief of the Fleet.

His name was Esek Hopkins, and he commanded all the ships the Navy had then. When he resigned, his title went with him. Then came a series of various ranks designating the Navy's top officers. In 1799 there was "master commandant," and in 1837 that was changed to "commander." Others used at varying times and places were "senior flag officer" and "commodore." The latter was said to have been created by the Dutch during a war with England in 1652. They were in need of admirals, but were short of money.



They thus got their flag officers at half the pay of an admiral.

David Farragut ("Damn the torpedoes, full speed ahead!") was



## WAY BACK WHEN



given the rank of admiral in 1866. George Dewey had the title of "Admiral of the Navy," a special rank authorized by Congress after his victory in the Spanish-American War. He was to hold it for life, and it would expire on his death.

While the word midshipman usually applies only to the men of the U. S. Naval Academy and NROTC units today, that's not how it started out. The title first belonged to youngsters on board British ships who were charged with duties of carrying orders from the officers to the crew. The young trainees, or midshipmen, were berthed midships and from this the name was derived.

"Middies"—as they were nicknamed—sometimes began their careers as early as age eight, and often they became distinguished officers. Today midshipmen is the term for officer candidates for both the British and American Navies.

For a switch, ensign is now a purely naval term that was commandeered from the army. It comes from the Norman expression meaning flag, and even today the word is synonymously used with flag. As a title, the term dates back to the days when it was customary for privileged squires to carry the colors of their masters into battle. These young men were known as ensign bearers and later just ensigns. The French navy was the first to borrow that title from the army, but it wasn't until 1862 that the U. S. Navy conferred the title officially on those men previously known as "passed midshipmen." These were the ones awaiting promotion to lieutenant.

Which brings us to lieutenant. The word is of French origin; lieu meaning place and tenant meaning holding. In ancient times, estate owners would be represented in the royal forces by one of these lieutenants — that is, they were "holding their place." Later,

the word was used for the officer in charge in the absence of a superior, and he was designated "First Lieutenant."

When the U. S. Navy began, First Lieutenant was like today's executive officer, second in command of a ship. Today, of course lieutenant is a formal rank, while first lieutenant designates a duty, usually that of a ship's deck officer serving under the gunnery officer.

Another title carried over from the past is the word "mate." Originally "master's mate," he was the first or chief mate of a vessel. In 1815 the chain of command of a ship went something like this: captain, lieutenant, master, master's mate, boatswain, gunner, carpenter, and midshipman. The mate was something resembling a warrant officer, but he was not in line of promotion—mainly because he was a civilian. These men handled the ship, but usually they took no part in the fighting.

Within 30 years the use of master's mate began to die out, and although it had a brief revival during the Civil War, by the end of the 19th century, it was gone. Today the word is used to designate some particular enlisted rating, such as machinist's mate and photographer's mate.

With its recent addition to the Navy's enlisted rating structure, the title "master-at-arms" has gained new significance. It is anything but a new term, however. Records show the title goes back to the Royal Navy of Charles I (1642-49), although at that time they were called sea corporals.

In those days the master-at-arms was the keeper of all swords, pistols, carbines, muskets and other small arms. His other duties—and he had a lot of them—included seeing that the bandoliers were filled with fresh powder before going into action. They were considered a kind of chief of police for the ship, and they had to be experts at close-order fighting under arms. Too, they led the drills under arms for the seamen.



The new MAs in today's Navy will be in charge of much of the Navy's investigative work and will also be responsible for a lot of the security for ships and stations.

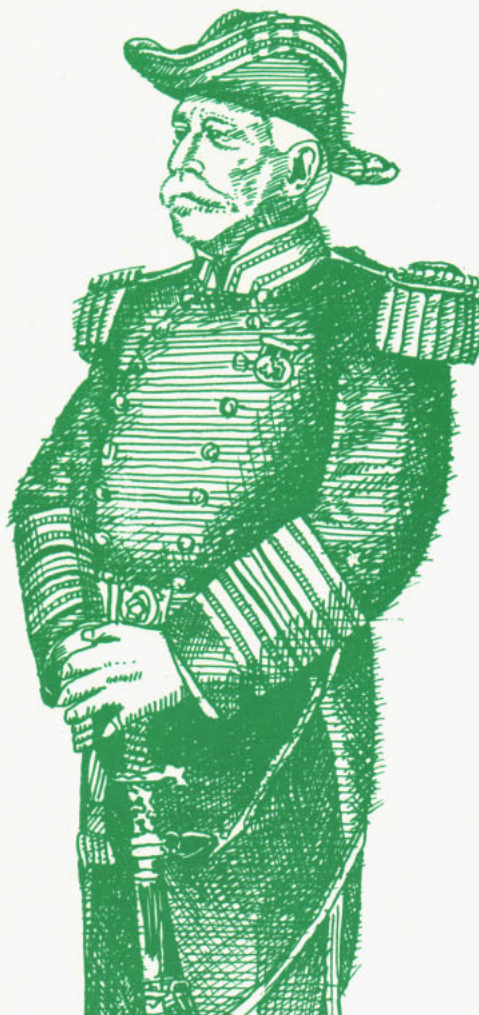
By way of decoration, the highest award that anyone in the Navy—seaman, mate, lieutenant or admiral—can receive is the Medal of Honor. It hasn't always been that way, however. The Medal of Honor was established in 1861 and given exclusively to Navy and Marine enlisted men. It was the first decoration formally authorized by the government to be worn as a badge of honor. A similar medal was set up for the Army the next year.

In 1863 the provision establishing the medal was expanded to include officers as well as enlisted men. Unlike other medals and awards, the Medal of Honor can only be given by an act of Congress. It is presented by the President in the name of Congress, and it can only be awarded once, no matter how many brave acts an individual performs.

During time of war, a more frequently received medal is the Purple Heart. Established by General George Washington in 1782 and originally call the Badge of Military Merit, it is this nation's oldest known continuing award for valor and service.

The award was first made of purple cloth edged with white lace or binding and sewn on the left breast of the tunic, just over the heart. That, of course, is how its latter-day name evolved. Use of the award died out in the 19th century, though it was never formally abolished. On the 200th anniversary of Washington's birth, 22 Feb 1932, it was announced that the Purple Heart would again be used as a fitting memorial to the general's memory. The present Purple Heart is a bronze and enamel medal awarded to all military personnel wounded or killed as a result of enemy action.

The Good Conduct Medal is another one of those awards that has been around for a while and has



**Above:** George Dewey was an admiral before it became an official U. S. naval rank in 1915. **Left:** A passed midshipman in 1852. This designation slowly evolved into ensign.

something of a checkered past. It was first handed out in 1888, although some say it started 23 years earlier as the honorable discharge badge. It was a fouled anchor patch that a man could wear on his left sleeve, demonstrating to all that he had served his country with "fidelity, zeal and obedience."

In 1870 this award officially received the title of "Good Conduct Medal" and consisted of a nickel Maltese Cross bearing the words

"fidelity, zeal and obedience" in the center and the recipient's name on the back. Some 18 years later these medals were called in and canceled, and the present award was issued. In 1902, receiving the Good Conduct Medal meant an extra 75 cents a month, but the additional pay ceased 20 years later.

At the first of this article, we quoted a somewhat more famous writer's rhetorical question, "What's in a name?" While that question hasn't been answered completely here, we've proved that at least it's a pretty good question—and it can provide interesting results if you ask about Navy terms.



# TAFFRAIL TALK

The christening ceremony which took place last July on the mole pier at NAS San Diego was an uncommon event by almost any standard. The woman wielding the traditional bottle of champagne against the craft's bow was the 1973 San Diego Seabee Queen, Navywoman Mary Davidsaver. The craft being bathed in bubbly was a *Self-Propelled Floating Pile Driver* which had been constructed by the San Diego Navy Public Works Center Transportation Department. It was scheduled for use within the PWC Maintenance Department.

A self-propelled floating pile driver is something rarely seen either in or out of the Navy. At San Diego, the craft's mission will be the upkeep and repair of about 11 miles of piers aboard or associated with the naval installations in the San Diego area.

The basic craft used in the pile driver's construction was a 500-ton barge 80 feet long and 32 feet wide. A 50-ton crane was installed on the main deck where it shares space with a deckhouse serving as storage space and as the crew's dining area.

The pile driver is powered by two 110-horsepower diesel engines and can travel to and from its work location on its own—a feature which the Navy expects will save both time and money.

Hatchways were cut in the deck for access into the hull where the engine room, air compressor and other equipment for driving piles are located.

Everyone in the Public Works Department was glad to see the new equipment. It replaced the 25-year-old, steam-operated pile driver which had formerly been used by the center. The old equipment had become costly to maintain and required the services of a full-time boiler tender to maintain steam for its operation. About an hour was formerly required to get up a sufficient head of steam for operations. The new pile driver, on the other hand, is ready to go at a moment's notice.



Signs of the times: The Navy is getting its first female Hull Maintenance Technician (HT). She is FN Irene Catherine Higgins, USN, who has just graduated from HT "A" School and will be assigned to New London, Conn.



Something to look for in future issues of *ALL HANDS* will be JOC Marc Whetstone's reports on this year's rifle matches—the first such comprehensive log on these events to be run in this magazine in some time. Marc, an *ALL HANDS* staffer, landed a spot on the 1973 All-Navy team and he's taken part in matches at Patuxent River and Norfolk, besides the all-state in Tennessee and the nationals in Ohio.

Now Marc has something else to shoot for—another target, zeroing in on this year's matches for our readership.

*The All Hands Staff*

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**RIGHT: ANTICIPATION—LT F. M. Dudine, Flight Deck and Aircraft Handling Officer aboard USS Guadalcanal (LPH 7) keeps a watchful eye skyward as he awaits his returning aircraft. Photo by PH2 Rick Boyle.**







# FLIGHT DECK:

Night Operations

those magnificent men in  
their flying machines .....



NAVAL AVIATION 1911 - 1973